Still Living Together:

RECENT TRENDS AND FUTURE DIRECTIONS IN CANADIAN REGIONAL DEVELOPMENT

EDITED BY

WILLIAM J. COFFEY

MARIO POLÈSE

87-01690/

The Institute for Research on Public Policy
L'Institut de recherches politiques

A national, independent, research organization
Un organisme de recherche national et indépendant

Founded in 1972, The Institute for Research on Public Policy is a national organization whose independence and autonomy are ensured by the revenues of an endowment fund which is supported by the federal and provincial governments and by the private sector. In addition, the Institute receives grants and contracts from governments, corporations and foundations to carry out specific research projects.

The *raison d'être* of the Institute is threefold:

- To act as a catalyst within the national community by helping to facilitate informed public debate on issues of major public interest
- To stimulate participation by all segments of the national community in the process that leads to public policy making
- To find practical solutions to important public policy problems, thus aiding in the development of sound public policies.

The Institute is governed by a Board of Directors, which is the decision-making body, and a Council of Trustees, which advises the Board on matters related to the research direction of the Institute. Day-to-day administration of the Institute's policies, programs and staff is the responsibility of the president.

The Institute operates in a decentralized way, employing researchers located across Canada. This ensures that research undertaken will include contributions from all regions of the country.

Wherever possible, the Institute will try to promote public understanding of, and discussion on, issues of national importance, with clarity and impartiality. Conclusions or recommendations in the Institute's publications are solely those of the author and should not be attributed to the Board of Directors, Council of Trustees, or contributors to the Institute.

The president bears final responsibility for the decision to publish a manuscript under the Institute's imprint. In reaching this decision, he is advised on the accuracy and objectivity of a manuscript by both Institute staff and outside reviewers. Publication of a manuscript signifies that it is deemed to be a competent treatment of a subject worthy of public consideration.

Publications of the Institute are published in the language of the author, along with an executive summary in both of Canada's official languages.

STILL LIVING TOGETHER:

Recent Trends and Future Directions in Canadian Regional Development

STILL LIVING TOGETHER:
Recent Trends and Future Directions in Canadian Regional Development

Edited by

William J. Coffey

and

Mario Polèse

The Institute for Research on Public Policy
L'Institut de recherches politiques

Copyright © The Institute for Research on Public Policy 1987
All rights reserved

Printed in Canada

Legal Deposit First Quarter
Bibliothèque nationale du Québec

Canadian Cataloguing in Publication Data

Main entry under title:
Still living together: recent trends and
future directions in Canadian regional development

ISBN 0-88645-047-0

1. Regional planning – Canada. 2. Canada –
Economic conditions – Regional disparities.
I. Coffey, William J., 1948- II. Polèse,
Mario, 1943- III. Institute for Research
on Public Policy

HC113.S84 1987 338.971 C87-090030-7

**The Institute for Research on Public Policy/
L'Institut de recherches politiques
2149 Mackay Street
Montreal, Quebec H3G 2J2**

Contents

List of Tables ix

List of Figures xvii

Foreword xix

Avant-propos xxiii

Acknowledgements xxvii

Contributors xxix

Introduction: **Still Living Together** 1
William J. Coffey and Mario Polèse

PART ONE: **REGIONAL DEVELOPMENT TRENDS** 11

Chapter 1: **Patterns of Regional Economic Development in Canada: Long-Term Trends and Issues** 13
Mario Polèse

Chapter 2: **The Growth and Redistribution of the Canadian Population** 33
Marc G. Termote

Chapter 3: **Structural Changes in the Canadian Space-Economy, 1971-1981** 73
William J.Coffey

Chapter 4:	**Regional Development Policies: Context and Consequences** *N. Harvey Lithwick*	121
PART TWO:	**INTEGRATION AND OWNERSHIP OF THE CANADIAN ECONOMY**	157
Chapter 5:	**The Multinational Firm and Regional Development** *Bernard Bonin and Roger Verreault*	159
Chapter 6:	**Regional Analysis of Corporate Decision Making Within the Canadian Economy** *R. Keith Semple*	203
Chapter 7:	**The Regional Consequences of Free(r) Trade with the United States** *William G. Watson*	237
PART THREE:	**TECHNOLOGY, ENERGY AND HUMAN RESOURCES**	275
Chapter 8:	**Energy Policy, Prices and Rents: Implications for Regional Growth and Development** *Robert L. Mansell*	277
Chapter 9:	**Atlantic Provinces Offshore Development: Some Issues** *A. Gordon DeWolf*	313
Chapter 10:	**Technological Change and Regional Development** *Barry Lesser*	337
Chapter 11:	**Investment in University Education, Regional Income Disparities and Regional Development** *Jean-Michel Cousineau and François Vaillancourt*	357

PART FOUR: DEVELOPMENT PROSPECTS AND POLICY CHALLENGES 381

Chapter 12: Regional Efficiency and Problems of Financing the Canadian Federation 383
Yves Rabeau

Chapter 13: The State and Development: The Politics of Regional Development Policy 407
Donald J. Savoie and John Chénier

Chapter 14: The Efficiency-Equity Tradeoff: The Macdonald Report and Regional Development 425
James D. McNiven

Regional Development: Some Thoughts Arising from a Review of Research Sponsored by the Institute for Research on Public Policy 437

Members of the Institute 447

Institute Management 451

Publications Available 453

List of Tables

Chapter 1

1. Provincial distribution of gross value added, 1890-1910, and personal income, 1926-1983, Canada 15

2. Provincial distribution of gross domestic product, 1961-1983, Canada 16

3. Personal income per capita, by province, 1926-1983 20

4. Personal income per capita, by province, 1966, 1980, 1983, excluding transfer income 23

5. Average weekly earnings, by province, 1980, 1985 25

6. Population and employment, by province, 1981 27

Chapter 2

1. Components of demographic growth: 1966-1971, 1971-1976, and 1976-1981 34

2. Components of demographic growth. Annual rates (in 0/00), 1966-1971, 1971-1976, 1976-1981 38

3. Total ("crude") migration rates (per thousand) between provinces, 1971-1976 and 1976-1981 41

4. Net interprovincial migration rates (percent), by province, 1961-1985 **43**

5. Regional disparities in fertility, mortality and migration levels: (1) 1966-1971, (2) 1971-1976, (3) 1976-1981 **46**

6. Probabilities (percent) of surviving at exact ages 20, 35, and 65 in the province of birth: (1) 1966-1971, (2) 1971-1976, and (3) 1976-1981 **52**

7. Spatial Life Expectancies at Birth. Percentage spent in province of birth: (1) 1966-1971, (2) 1971-1976, and (3) 1976-1981 **54**

8. Net reproduction rates, with and without migration: (1) 1966-1971, (2) 1971-1976, and (3) 1976-1981 **57**

9. Observed and projected population figures, 1981-2006 **60-61**

10. Observed and projected percentage distribution of population, 1901-2006 **64**

11. Observed and projected annual growth rate and age structure, 1966-2006 **67**

12. Observed (1966-1981) and projected (1981-1996) provincial rates of aging **69**

Chapter 3

1. Sectoral Shares, Canadian Urban System 1971-1981 **76**

2. Sectoral Shares, Canadian Urban System by Region 1971-1981 **77-81**

3. Profile of Sectoral Share Changes, Canadian Urban System, by Region 1971-1981 **82**

4. Shift Effect, Canadian Urban System, by Region 1971-1981 **85**

5. Location Quotients, Canadian Urban System, by Region 1971-1981 **86**

6. Sectoral Shares, Canadian Urban System, by Size Categories, 1971-1981 **88**

7. Profile of Sectoral Share Changes, Canadian Urban System, by Size Categories, 1971-1981 **89**

8. Shift Effect, Canadian Urban System, by Size Category, 1971-1981 **91**

9. Location Quotients, Canadian Urban System, by Size Category, 1971-1981 **92**

10. Specialization and Change, Canadian Urban Areas, 1971-1981 **94-99**

11. Occupation Types, Canadian Urban System, 1971-1981 **101**

12. Occupation Type by Region, Canadian Urban System, 1971-1981 **102**

13. Occupation Type by Region and by Sector, Canadian Urban System, 1981 **104**

14. Occupation Type by Size Category, Canadian Urban System, 1971-1981 **105**

15. Occupation Type by Size Category and by Sector, Canadian Urban System, 1981 **106**

16. Occupation Type, Canadian Urban Areas, 1981 **108-113**

17. Identification of Urbanized Areas **117-119**

Chapter 4

1. The National Economic Milieu, by Period 1947-1983 **145**

2. Trends in Regional Disparities for Key Years 1947-1983 **146**

3. Average Annual Federal Transfers to the Provinces and Municipalities, 1947-57 to 1984-85 by Period **147-148**

4. Comparison of Average Annual Federal Transfers to Provinces, With Annual Averages of Selected Economic and Regional Development Program Expenditures by Period **149**

5. Average Annual Federal Transfers to Provinces and Municipalities Compared to Average Annual DREE Expenditures for Selected Periods **150**

Chapter 5

1. Coefficients of Localization **165**

2. Provincial Distribution of Manufacturing Employment by Controlling Country **175-176**

3. Manufacturing Employment by Controlling Country **177-178**

4. Location Quotient (Employment) **179-180**

5. Manufacturing Employment: Difference Between Canadian and Foreign Control **181-182**

6. Type of Control in Metropolitan Areas **183**

7. Distribution of Manufacturing Establishments by Controlling Country **184-185**

8. Number of Manufacturing Establishments by Controlling Country **186-187**

9. Location Quotient (Establishments) **188-189**

10. Provincial Distribution of Value Added by Controlling Country **190-191**

11. Manufacturing Sector Value Added by Controlling Country **192-193**

12. Location Quotient (Value Added) 194-195

13. Manufacturing Value Added: (Difference Between Foreign and Canadian Control) 196-197

Chapter 6

1. Total Revenues and Assets of the Largest Corporations by Sector, Subsector and Origin of Control for 1984 205

2. Total Revenues and Assets by the Largest Foreign Corporations by Sector and Subsector for 1984 207

3. Total Revenue of Resource Corporations Headquartered in Canadian Cities in 1984 208

4. Total Revenue of Manufacturing Corporations Headquartered in Canadian Cities in 1984 209-211

5. Total Revenue of Service Corporations Headquartered in Canadian Cities in 1984 212-213

6. Top 64 Canadian Cities Controlling the Non-Financial Sectors of the Canadian Economy in 1984 214-215

7. Total Assets of Financial, Utility and Development Corporations in Canadian Cities in 1984 218-219

8. Dominant Cities for the Canadian Urban System Ranked by their Control over the Non-Financial and Financial Sectors of the Canadian Economy in 1984 222

9. Dominant Cities in the Canadian Urban System Ranked by their Control over Crown Corporations in the Non-Financial and Financial Sectors of the Economy 1984 226

10. Domestic and Composite Index of Regional Control 228-229

Chapter 7

1. Free Trade's Effects on Regional Value-added in Manufacturing 252-253

2. Free Trade's Effects on Employment Shares in Manufacturing 254-255

3. Free Trade's Effects on Sectoral GDP Shares, by Region 257

4. Free Trade's Effects on Sectoral Employment, by Region 258

5. Establishments with more than 500 employees, by industry and region 259-262

6. Structure of Canadian Trade with the United States, 1985 264

Chapter 8

1. Percentage Distribution of Gross Domestic Product (at Factor Cost) and Employment by Sector, Alberta, 1971 and 1981 284

2. Estimates of the Magnitude and Distribution of Natural Resource Rents, Canada, by Province or Territory, 1980 293

3. Estimates of the Net Federal Fiscal Balance by Region, 1971 and 1981 312

Chapter 9

1. Some Indicators of Alberta's Economic Performance, 1971-1983 314

2. Oil and Gas Reserves, East Coast Canada Compared to United Kingdom and Norwegian North Sea Sectors 318

3. Annual Construction and Operating Costs, Venture and Hibernia Projects 323

4. Employment, Venture and Hibernia, Construction and Production Phases 324-325

5. Employment and Industrial Impacts of Venture and Hibernia Projects 327

6. Revenue and Costs, Venture and Hibernia 328

Chapter 10

1. Population Figures for the Atlantic Provinces 344

2. Population 15 Years and Over by Sex and Level of Schooling, Canada and Atlantic Provinces, 1981 345

3. Labour Force Statistics, Canada and Atlantic Provinces 346

4. Labour Force 15 Years and Over by Sex and Selected Occupations, Canada and Atlantic Provinces, 1981 347-349

5. Estimates of Employees by Industry (Non-Agriculture), Canada and Atlantic Provinces, 1983 350

6. Computer Installations in Canada 352

7. Summary Statistics - Establishments Primarily Engaged in Providing Computer Services, 1981/82, Canada and Atlantic Provinces 353

Chapter 11

1. Regional Income Disparities in Canada: Employment Income for Males in Nine Provinces, 1980 359

2. Labour Force by Level of Education and by Province: Males, Nine Provinces, 1981 **361**

3. Employment Income and Average Educational Level: Males, Nine Provinces, 1980-1981 **362**

4. Average Income by Level of Education: Males, Nine Provinces, 1980 **363**

5. Net Effect of Secondary and University Schooling Upon Earnings (Expressed as a % above primary 1-4 level), Males, Nine Provinces, 1981 **364**

6. Public and Private Rates of Return on University Education, Males, 1980 **368**

7. Net Migration of Young Degree Holders, 1976-1981 **370**

8. Regression Analysis of Employment Income, Males, 1980 **374**

Chapter 12

1. Federal Financing in Quebec and the Atlantic Provinces, 1970-1980 **386**

2. Effect of a 1.0 Percent Increase in Regional Gross Domestic Product Upon the Provincial Revenues of Quebec and the Atlantic Provinces, 1985 **388**

3. Effect of a 1.0 Percent Regional GDP Increase Upon Federal Finances, 1981 **389**

List of Figures

Chapter 6

1. Largest 25 cities controlling the non-financial sectors of the Canadian economy in 1984 in millions of dollars of revenues 217

2. Largest 25 cities controlling financial, utility and development sectors of the Canadian economy in millions of dollars of assets 221

3. Largest 25 cities of foreign control in the non-financial sectors of the Canadian economy in millions of dollars of revenues 224

4. Largest 7 cities of foreign control in the financial, utility and development sectors of the Canadian economy in 1984 in millions of dollars of assets 225

Chapter 7

1. Constant Returns to Scale 247

2. A General Equilibrium Regional Model 265

Chapter 8

1. Economic Rent Concepts 290

Chapter 9

1. Offshore Drilling Activity, Nova Scotia, Newfoundland, 1966-1985 316

Chapter 11

1. The Human Capital Model 367

Foreword

Regional economic disparities in Canada are almost as old as the country itself. Moreover, for over 100 years, the problem of eliminating, or even significantly reducing, regional disparities has remained intractable.

To be sure, there have been some individual gains, in different regions and at different times. But such gains have tended to be temporary and most often the result of external pressures, rather than domestic regional policy initiatives. Alberta is the most recent example of a province that has gained. It is also an example of a gain due to external events and a gain now threatened with reversal, again by external events.

The foregoing does not prove that government regional development efforts have been of negligible impact. Nor does it prove that the goal of reducing regional inequality, a goal now enshrined in the Constitution, is unworthy. It merely demonstrates the goal is elusive and will not be met without fresh approaches and new ways of thinking.

This volume, edited by William Coffey and Mario Polèse, deals vividly with the continuing problem of regional disparities in Canada. It provides an empirical overview of regional inequalities in Canada, reviews and analyzes past policy initiatives, and examines new opportunities and new policy approaches which might be tried.

Attached to this volume is a review by Barry Lesser of a five-year research program on regional development issues (concentrating on Atlantic Canada), recently completed by the Institute for Research on Public Policy. In many respects, the objectives of this program were similar to those of the Coffey and Polèse volume. So too are many of the conclusions. When, for example, Mario Polèse writes, in Chapter One of this book,

> A full-blown regional development policy for Canada would take into account the regional consequences of all federal and provincial programs . . . we must accept that direct regional policy is only one of the many policies, and not necessarily the most important one, influencing regional development in Canada.

he is echoing the words of Ian McAllister, who in his Institute study, *Regional Development and the European Community: A Canadian Perspective*, argues that in Canada, as in the EEC, there has been, perhaps, too much attention paid to explicit instruments of regional policy and not enough to the regional implications of national policies.

Such commentary is not an argument for giving up on discrete regional programs, but it illustrates the need to cast such programs in the larger context of national economic policy. Given current developments in the national economy, this need has become even more imperative than was the case in the past. For there is growing evidence that Canada is embarking on an era of profound economic change, change that will affect all regions, both rich and poor. In part driven by technological change and the increasing globalization of economic activity, this change will fundamentally alter the environment within which regional development initiatives are pursued.

In a recent speech to the Progressive Conservative Party of Nova Scotia, I had occasion to remark

> This [next] decade may confront Nova Scotians with the first really basic decision of economic policy they have had an opportunity to make for a long, long time.

I might just as easily have said Quebecois or Manitobans or British Columbians. All of Canada's provinces will be affected; all of Canada's provinces are faced with basic decisions on their economic future. This is why a national policy framework, sensitive to regional concerns and aspirations, is necessary. It is why discrete regional development programs can no longer operate independently of national policy; why regional development must become an integral part of all national policy.

The Institute is pleased to publish *Still Living Together: Recent Trends and Future Developments in Canadian Regional Development*, as part of our commitment to a process of keeping significant issues of national importance before policy-makers and the Canadian public. Regional development is such an issue. It is our belief that an important element in solving national problems lies in creating and maintaining a consciousness of the issue by all Canadians. It is not just a concern of Canada's less advantaged regions, it is a concern of consequence for all of us. As the noted Canadian scholar, Donald Smiley, has written, "A national community is based on a sharing of claims, both individual and collective".

We hope that the publication of this volume will help, even in a small way, to raise the consciousness of Canadians of the problem of regional disparities and the search for solutions and, in so doing, strengthen our country as a national community.

R.L. Stanfield
Chairman
Institute for Research on Public Policy
December 1986

Avant-propos

Les disparités régionales au Canada sont presque aussi vieilles que le pays lui-même. Qui plus est, depuis plus de cent ans, on n'a pas pu parvenir à les éliminer, ni même à les réduire d'une façon sensible.

Certes, certaines régions, à des époques différentes, ont connu quelques réussites particulières, mais de tels succès se sont révélés temporaires et ont été, le plus souvent, le fait de pressions extérieures plutôt que d'initiatives locales en matière de politique régionale. L'Alberta en est l'exemple le plus récent : sa prospérité, acquise grâce à des circonstances externes, se voit maintenant menacée, une fois de plus par des circonstances externes.

Ce qui précède ne veut pas dire que les efforts de développement régional du gouvernement aient eu un impact négligeable, ni que le projet de réduction des inégalités régionales, projet maintenant incorporé dans la Constitution, soit sans mérite. Cela démontre simplement que le but est difficile à atteindre et qu'on ne pourra y parvenir qu'en ayant recours à des méthodes innovatrices et à de nouvelles manières de considérer la question.

Le présent ouvrage, publié sous la direction de William Coffey et Mario Polèse, traite avec brio du problème persistant des disparités régionales au Canada. Il fournit un point de vue empirique sur les inégalités régionales au Canada, passe en revue et analyse les initiatives politiques antérieures et examine, en fonction des situations actuelles, les nouvelles solutions susceptibles d'être essayées.

Une analyse de Barry Lesser fait suite à cette étude; elle rend compte d'un programme de recherche de cinq ans sur les problèmes de développement au niveau régional (axé sur le Canada atlantique), récemment achevé par l'Institut de recherches politiques. Les objectifs de ce programme étaient, à bien des égards, similaires à ceux du volume de Coffey et Polèse. Il en est de même pour un grand nombre des conclusions. Ainsi, par exemple, quand Mario Polèse écrit dans le chapitre premier de ce livre :

> Une politique régionale canadienne, pour être complète, devrait tenir compte des répercussions au niveau régional de tous les programmes fédéraux et provinciaux . . . nous devons comprendre que la politique régionale directe n'est qu'une solution parmi beaucoup d'autres, sans être nécessairement la plus efficace pour le développement régional canadien.

il rappelle le point de vue soutenu par Ian McAllister dans une étude de l'Institut intitulée : *Le Développement régional et la Communauté européenne : une perspective canadienne*. Ce dernier auteur fait remarquer que, au Canada comme dans la CEE, on a peut-être prêté trop d'attention aux moyens explicites de politique régionale et pas assez aux conséquences des politiques nationales sur les régions.

Si un tel commentaire ne justifie pas l'abandon de programmes régionaux particuliers, il illustre cependant la nécessité de replacer de tels programmes dans le plus large contexte d'une politique économique nationale. Etant donné les tendances actuelles de l'économie nationale, ce besoin est devenu encore plus urgent qu'il ne l'était autrefois, car il s'avère évident que le Canada est en train de s'engager dans une ère de bouleversements économiques, lesquels vont affecter l'ensemble des régions, les riches comme les pauvres. En partie dus aux progrès technologiques et à une globalisation croissante de l'activité économique, ces changements vont radicalement transformer l'environnement dans lequel les initiatives de développement s'opèrent.

Dans une récente adresse au Parti progressiste conservateur de Nouvelle-Ecosse, j'ai pu faire observer que :

> Au cours de la (prochaine) décennie, les habitants de la Nouvelle-Ecosse risquent d'avoir à faire face à leur première décision de politique économique vraiment fondamentale, plus importante que toutes celles qu'ils ont eu l'occasion de prendre depuis bien longtemps.

J'aurais tous aussi bien pu dire cela des Québécois ou des Manitobains : toutes les provinces canadiennes seront affectées;

toutes doivent, dès maintenant, prendre des décisions fondamentales concernant leur avenir économique. C'est pourquoi une politique nationale planifiée, sensible aux préoccupations et aux aspirations régionales, est nécessaire; c'est pourquoi les programmes particuliers de développement régional ne peuvent plus fonctionner indépendamment d'une politique nationale; c'est pourquoi le développement régional doit devenir partie intégrante de toute politique nationale.

L'Institut est heureux de publier *Still Living Together: Recent Trends and Future Developments in Canadian Regional Development* (Toujours ensemble : les tendances récentes et l'évolution future du développement régional au Canada). Cela entre dans le cadre de notre mission, qui est de porter à l'attention des hommes politiques et du public canadien les questions d'importance nationale. Le développement régional appartient à cette catégorie. Nous croyons fermement que c'est en suscitant une prise de conscience dans le public et en maintenant l'intérêt de tous les Canadiens pour ces questions que les problèmes nationaux seront le plus facilement résolus. Le développement régional ne doit pas être uniquement le problème des régions canadiennes les moins avantagées, ce doit être notre préoccupation à tous. Comme l'a écrit le distingué érudit canadien Donald Smiley : "Une communauté nationale se constitue à partir d'une participation aux revendications, que celles-ci soient individuelles ou collectives."

Nous espérons que le présent ouvrage contribuera, quand bien même modestement, à rendre les Canadiens plus conscients du problème des disparités régionales et à favoriser la recherche de solutions, renforçant de cette façon notre pays en tant que communauté nationale.

R.L. Stanfield
Président
L'Institut de recherches politiques
Décembre 1986

Acknowledgements

The national conference at which the papers contained in this volume were originally presented was made possible through the financial support of the Social Sciences and Humanities Research Council of Canada; the Protocol Office of the Government of Nova Scotia; the Secretary of State of Canada; Dalhousie University; and the Canadian Regional Science Association. The publication of this volume was assisted by financial support provided through the Canada-Nova Scotia Economic Development Planning Subsidiary Agreement; the editors, authors, and publisher are grateful to the Nova Scotia Department of Development and the Office of the Federal Economic Development Coordinator-Nova Scotia (Department of Regional Industrial Expansion) for making this support available.

Contributors

Bernard Bonin is a professor at the École nationale d'administration publique in Montreal.

John Chénier is a researcher affiliated with the Canadian Institute for Research on Regional Development.

William J. Coffey is a professor in the Département d'Études Urbaines, Université du Québec à Montréal, on leave from the School of Public Administration at Dalhousie University.

Jean-Michel Cousineau is Director of the École de relations industrielles at the Université de Montréal.

A. Gordon DeWolf is Senior Policy Advisor with the Office for Regional Development – Nova Scotia (Department of Regional Industrial Expansion).

Barry Lesser is a professor in the Department of Economics, Dalhousie University, and Director, Information Society Studies Program, The Institute for Research on Public Policy.

N. Harvey Lithwick is a professor in the School of Public Administration, Carleton University.

Robert L. Mansell is a professor in the Department of Economics, University of Calgary.

James D. McNiven is Deputy Minister of Development for the Province of Nova Scotia.

Mario Polèse is Director of INRS-Urbanisation, Institut national de recherche scientifique, Université du Québec.

Yves Rabeau is a professor in the Département de sciences économiques, Université de Montréal.

Donald Savoie is Executive Director of the Canadian Institute for Research on Regional Development.

R. Keith Semple is a professor in the Department of Geography, University of Saskatchewan.

Marc G. Termote is a professor at the INRS-Urbanisation, Institut national de recherche scientifique, Université du Québec.

François Vaillancourt is a professor in the Département de sciences économiques, Université de Montréal.

Roger Verreault is a Ph.D. candidate at the Université de Paris, Nanterre.

William G. Watson is a professor in the Department of Economics, McGill University.

Introduction: Still Living Together

William J. Coffey
Mario Polèse

The title of this book may require a brief explanation. Since the 1960s, Canada has been regarded as one of the world's leading proponents and practitioners of regional development policy. A variety of federal and provincial agencies have attempted to alleviate the problem of economic disparities between Canada's regions by means of both explicit (direct) and implicit (indirect) policy initiatives. Against this background, a substantial scholarly literature has been amassed, dealing with the nature of Canada's regional economies and with critical analyses of various development policies and programs. A milestone in this literature is the now-classic study published by the Economic Council of Canada in 1977, *Living Together: A Study of Regional Disparities*. This report reviewed historical trends and consolidated contemporary thought concerning the nature and causes of disparities between Canada's regions.

By the mid-1980s, many students of regional development had begun to consider that the time had come for a reappraisal of former attitudes, approaches, and policies towards Canada's "regional problem". Not only had a considerable length of time passed since *Living Together* (much of which was based upon 1971 data) but, more importantly, a number of significant changes had occurred in this nation's regional structure and in its response to regional issues. Among these are:

1) a changing regional balance (i.e., the rise of the west and the relative decline of central Canada);
2) reduced uncertainty concerning the position of Quebec in the Canadian federation;
3) a changing economic structure, characterized by the rise of the service economy and the decline of traditional manufacturing;

4) the (temporary?) subordination of equity concerns in the face of poor economic performance at the national scale;
5) the evolution of a new federal regional development policy apparatus;
6) the rise of new themes and approaches to development (e.g. technology, human resources, resources rents, the spatial dimensions of ownership and control).

It was within this context that the idea for *Still Living Together* was conceived[1].

Here in the mid-1980s, the regional pressures on the Canadian federation appear far less pressing than they did twenty (or even ten) years ago. Regional economic policy has, in some ways, come full circle. Following the DREE experience[2], Canada has for the moment abandoned the idea of a distinct government agency committed to the reduction of regional economic disparities. Much of the regional economic policy apparatus put into place during the 1960s and 1970s at the federal level (location subsidies, infrastructure, GDAs[3], and so forth) has undergone profound change. Both the pertinence and the efficiency of regional economic policies has been challenged. Similar trends may be observed at the provincial level: l'Office de Planification et du développement du Québec (l'OPDQ), Quebec's own regional economic development agency, has seen its scope reduced drastically over the past few years. Governments appear to have limited faith in their capacity to affect the regional patterns of the economy. This is a striking departure from the interventionism and the optimism of the 1960s.

But while both the policy context and the specific approaches to development have changed, the underlying determinants of regional economic development in Canada, which in turn give rise to income and employment disparities, have not fundamentally changed over the past few decades. The current state of frustration with regional economic policy stems in large part from an incomplete understanding of the factors shaping the regional configuration of the Canadian economy. This small book will, it is hoped, serve to lower the level of frustration, however slightly.

Scope and Objectives

The objectives of the present book are threefold. ***First***, it seeks to provide an updated empirical framework for the study of regional development in Canada. Thus, the first part of the book provides, in turn, a long-term overview of economic development trends by province (Chapter 1, Mario Polèse); a study of demographic trends by province (Chapter 2, Marc Termote); an analysis of recent structural changes within the Canadian urban system (Chapter 3, William Coffey); and culminating with an overview of Canadian regional development policies from 1947 to 1985 (Chapter 4, N.H. Lithwick). The perceived need to reappraise regional development policies may in part be traced to the increasingly well-documented realization that economic and demographic patterns within Canada are surprisingly persistent, perhaps more so than in many other Western nations.

Second, the present work seeks to provide a framework for the reappraisal of current policies, but with a particular view towards future prospects. The last three chapters (which comprise Part Four of the book) stress current debates and issues. Chapter 13 (Donald Savoie and John Chénier) provides a re-evaluation of the fiscal and institutional climate within which regional economic policies will have to evolve in the future, while Chapter 14 (James McNiven) deals, in part, with the 1985 Macdonald Report and its implications for regional development policy. Much of the debate on regional development policy is centered on the question of so-called fiscal federalism, on how and why money should be transferred between the federal and provincial levels of the Canadian system; this issue is addressed by Yves Rabeau (Chapter 12).

Over the past two decades, policy debates in Canada, especially among economists, have been largely dominated by the issue of transfer payments (between governments and between persons) and their impact on regional development[4]. Indeed, the reader will notice that this question emerges in several chapters. In selecting the chapters for this book, however, we have consciously chosen to concentrate on other issues, if only to minimize the chances of repeating what has already been written elsewhere. There is, further, a more fundamental reason for this choice. As the title of the present book indicates, we wish to address the issue of regional *development*, and not merely the question of regional per capita income disparities. In economic terms, we may, for the purposes of this book, define development to mean a sustained growth in per capita income generated by the residents of a region; that is, income which a region *earns* through the production and sale of goods and services.

As the Canadian experience clearly demonstrates, there is no easy-to-establish link between money transfers and the level of development. Interregional transfers can and do serve to reduce per capita income disparities by shifting money from richer to poorer regions, but there is no *a priori* reason to believe that transfers will, in and of themselves, increase the competitive position of poorer regions, i.e. their capacity to generate greater market income. The current questioning of transfer schemes stems in part from the realization that regional disparities, expressed in terms of per capita market income, have changed only very little over the last few decades (see Chapter 1). We should, perhaps, never have expected regional income transfers to solve the regional development problem[5]. The primary goal of most transfer schemes, most notably equalization payments, is one of equity, not efficiency. As Rabeau demonstrates in Chapter 12, the present model of equalization payments is certainly not an incentive to efficient behaviour on the part of the governments of the less affluent provinces.

Canada's various transfer schemes will undoubtedly continue to undergo modifications in the future as governments attempt to reconcile efficiency and equity objectives, but the two will remain irreconcilable to a large degree. Yet, pure equity considerations cannot be abandoned if the term "living together" is to have meaning. In some cases transfers will, indeed, decrease efficiency, reducing the incentives to individuals and to governments to behave in a more productive fashion. This "development dilemma" is one which Canadians will continue to face in the future; the choices are as much political as they are economic. We must, however, beware of pushing the causal links between transfer payments and development (or more correctly, underdevelopment) too far.

That money transfers are not the solution to (market) per capita income disparities is now relatively well established. On the other hand, transfers are clearly not at the origin of such disparities[6], although they may reduce the rate of adjustment (of people and governments to changing economic conditions). Perhaps too much energy has been spent attempting to link development and transfer payments. In order to understand the roots of regional development disparities in Canada, we must look beyond the transfer payments issue.

The *third* and principal objective of the present volume is to take a fresh look at some of the major factors shaping the regional dimensions of the Canadian economy, stressing those most likely to affect future directions. Part Two concentrates on the international character of the Canadian economy, a dimension all too often neglected in regional policy analysis. Chapters 5 to 7 deal, in turn, with the regional impact of direct foreign investment (Bernard Bonin and Roger Verreault), regional analysis of corporate structure and decision-making (R. Keith Semple) and, finally, the regional consequences of freer trade (William Watson). Part Three emphasizes natural and human resources. Chapters 8 to 11 examine, respectively, the implications of resource development and resource rents for regional development (Robert Mansell on energy policy and Gordon DeWolf on offshore resources in the Atlantic Provinces); the impact of technological change on regional economic trends (Barry Lesser); and the impact of educational investment differences on regional income disparities (Jean-Michel Cousineau and François Vaillancourt).

As modern economies become increasingly human resource oriented, questions of education and technological innovation will come to play a greater role in regional development considerations. This is true of all Western nations. On the other hand, the role of resource rents is, in many ways, a uniquely Canadian problem, both because of the economic structure of the Canadian economy (still highly linked to resources) and because of the institutional/federal structure of the Canadian system. In a unitary system, such as France or Britain, the distribution of resource rents would not raise the same problems; a regional "Heritage Fund" (as set up by Alberta) would probably be impossible. Canada's geography and position within the international economy are also quite different from those of most other Western nations. In order to fully comprehend the factors shaping the regional dimensions of the Canadian economy, we must accept that the Canadian experience is, in many ways, a unique one. Both the apparent persistence of certain regional economic trends, and their consequent resistence to policy interventions are, in part, the result of the very nature of Canada.

A Continental Perspective

Any analysis of regional development patterns in Canada cannot ignore geography. The dimensions of the Canadian problem are different from those of the United States or of Western Europe. Canada's geography must be set in a continental framework. The Canadian economy is very open, a characteristic shared by many Western nations with small economies. But, unlike most other nations, Canada's international economic relations (both in terms of capital flows and trade) have, over the last few decades, been overwhelmingly dominated by one partner, the United States of America. Despite occasional setbacks, the economic integration of the North American continent continues to progress.

The traditional concept of centre-periphery must be seen in this context. In a North American setting, Canadian "peripheral" regions will always be more peripheral than any comparable U.S. region. However peripheral the state of Maine may be relative to North American markets, Eastern Quebec and Atlantic Canada will always be more peripheral, with the corresponding communications, transport and information costs which are related to distance. However peripheral Minnesota may be within the North American system, Northern Ontario, Manitoba and Saskatchewan will always be more peripheral. Distance matters; it affects trade flows, rates of diffusion of technology (Chapter 10, Lesser), head office location decisions (Chapter 6, Semple) and plant location decisions (Chapter 5, Bonin and Verreault).

The Canadian region which is least peripheral within the North American context is clearly Ontario, specifically southern Ontario. The latter is better suited than most other Canadian regions to serve U.S. markets. It is also the region for which, *ceteris paribus*, communications costs and other interaction costs with major U.S. regions are minimized (specifically the New York-Chicago industrial belt). Such costs are an important element in plant and head office location decisions. It should come as no surprise that direct U.S. investment in Canada is highly concentrated in Ontario. Indeed, according to Bonin and Verreault (Chapter 5), Ontario would have had 90,000 fewer manufacturing jobs in 1981, and Quebec 40,000 more (B.C. 15,000 more, and so on for other provinces), if U.S.-controlled manufacturing jobs were regionally distributed on a per capita basis. The dominance of Ontario as a favoured location of foreign controlled (U.S.) manufacturing employment has not changed substantially over the last twenty years.

By the same token, the U.S. link tends to increase Toronto's dominance as a location for corporate headquarters and decision-making. Toronto's corporate structure is very much a result of the locational preferences of foreign controlled (U.S.) corporations, with respect to the location of their Canadian head offices. Foreign controlled headquarters in the manufacturing sector accounted for 70.8 percent of gross revenues controlled by Toronto-based firms, compared to 31.8 percent for Montreal (Semple, Chapter 6). Indeed, if we were to remove the foreign-controlled component, Montreal would probably be as important as Toronto as a base for manufacturing head office operations. The impact, in turn, of head office location decisions on the creation of a dynamic financial and business service sector cannot be overestimated.

The traditional view on trade protection holds that a liberalization of trade (notably with the U.S.) will most benefit peripheral regions. William Watson (Chapter 8) challenges this view, based on the application of a general (but non-regional) equilibrium model. All regions would stand to gain according to Watson's conclusions. We may reasonably assume, however, that if distance costs were explicitly integrated into his calculations (a major undertaking), an increasing share of the gains from trade liberalization would go to Ontario, and perhaps to Quebec and British Columbia.

The unique geographical configuration of the Canadian economy and its integration into the international economy favour a limited number of regions, i.e., those best suited for trade and interaction with our commercial partners: southwestern Quebec, southern British Columbia and, most notably, southern Ontario. In Canada, it must also be recalled, the same region which is best suited to serve outside markets is also often best suited to serve internal markets. The Canadian market is small by world standards; Ontario is located at the centre of gravity of that market. This is very different from the U.S. situation, for example. The American economy is not dominated by one foreign trading partner, thus permitting the development of diversely located urban centres linked to the international economy (New York, Miami, San Francisco, and so forth); its internal/regional markets are much larger, giving rise to significant regional urban centres (Atlanta, Denver, Boston, and so forth), while the centre of gravity of its national market is located in the Mid-West, favouring urban centres such as Chicago, Detroit and Cleveland.

In the United States, climate and other amenity-oriented factors tend to favour the development of regions in the so-called sun-belt, those outside the traditional northeastern industrial heartland. With perhaps the exception of southern British Columbia, no such alternatives for amenity-oriented development exist in Canada; here, the central provinces, the traditional heartland, also possess the most temperate climate and the widest range of urban amenities. In simple terms of job creation opportunities, and in terms of the range of possible internal destinations for job-seeking migrants, the options within Canada are likely to remain far more limited than in the United States. There is little reason to believe that the centrifugal forces at work in the U.S. will manifest themselves in Canada.

Technology, Human and Physical Resources

It is often hoped that the development of new technologies, especially in the communications sector, will improve the relative position of peripheral regions. Barry Lesser (Chapter 10) dampens our optimism with respect to Canadian regions, especially Atlantic Canada. Here again, geography and relative market size come into play. The adoption of new technologies is sensitive to distance; new technologies are systematically adopted at a lower rate in Atlantic Canada, in turn affecting the productivity of labour (and relative wage rates). There are persistant leaders and laggards in Canada. Geographical distance often goes together with sociological and cultural distance. Newfoundland and Cape Breton are indeed distant from the North American heartland.

The production, adoption and adaption of new technologies are, in part, linked to urban size threshholds, because of their dependence on a nexus of urban services, human resources and amenities. The relatively small size of Canada's peripheral regional markets means that they shall, in all probability, continue to be at a disadvantage relative to Central Canada, both with respect to the production and the adoption of new technologies. Most U.S. regions, even those most "peripheral" by American standards, are generally not very far from an urban metropolis (with a population of around one million). Atlantic Canada's situation is very different. As William Coffey (Chapter 3) demonstrates, high-technology linked service and industries, as well as fast-growing financial and business services, continue to be highly concentrated in Canada's largest urban centres, located outside of the Atlantic region.

As technology changes, as product cycles evolve, as preferences and demand are transformed, regions, like nations, must constantly adapt and adjust if they are to generate an adequate level of income and employment for their inhabitants. Not only does this require the introduction of new technologies (at a rate comparable to that of competing regions) but also investments in human resources to ensure adequate productivity levels. Canada's peripheral regions are not necessarily well-placed in this competitive race. The alternative is, of course, to adjust via higher rates of unemployment, lower wages and/or out-migration. But, here again, the very nature of Canada and its geography limits the adjustment options.

Marc Termote (Chapter 2) reminds us that language continues to be a potent barrier to interregional mobility. In demographic terms, Quebec is disconnected from the rest of Canada. Learning a new language and a new culture (new behaviour patterns) constitutes an important cost for persons moving from one linguistic zone to another, a cost which individuals will normally seek to avoid. Not only does this limit the options facing Francophone Canadians (that is, it raises the cost of certain options), but it also significantly reduces the options open to Atlantic Canadians. The "normal" migratory behaviour of Atlantic Canadians would be first to move west to the next nearest region and its metropolis, respectively the province of Quebec and Montreal. This option implies high (personal) costs in terms of language learning and cultural adaptation, however. Atlantic Canadians are, in essence, asked to "jump over" Quebec in order to move to other parts of English Canada, thus raising the personal costs of migration. Here again, the Canadian situation is different from the American one, in large part explaining why interregional labour mobility is generally lower in Canada than in the U.S.

Because of Canada's economic structure, regional growth points are often linked to resource development, which, as the Alberta experience again demonstrates (Robert Mansell in Chapter 8), are all-too-often of a highly cyclical nature. The adjustments required, both in terms of fiscal transfer arrangements between governments and in terms of migration responses, are far more complex and unpredictable than in the case of sustained regional growth patterns. This adds a degree of instability to the Canadian system unknown in most other nations, while at the same time raising the costs of migratory adjustments (in essence, raising the risks to the individual of any move).

In many cases, the most profitable public investments which a region can make will be in its human resources. Indeed, in a world economy where competitiveness is increasingly based on knowledge, information and technological innovation, expenditures on education and training probably remain the most promising options. Using a human capital model, Cousineau and Vaillancourt (Chapter 11) suggest that public expenditures on university education do not reap the same benefits everywhere in Canada. Here again, the existing regional economic structures and migratory patterns would appear to place Atlantic Canada at a relative disadvantage. Public and private returns to investments in university education are not necessarily the highest there; Atlantic Canada is a net exporter of university graduates to the rest of Canada, in essence subsidizing the development of other regions. This is certainly not a stimulus to public (provincial) investment in higher education in Atlantic Canada, a region where such investments may be crucial to future development prospects. Indeed, why invest in a (human) resource which a province, because of its economic structure, will probably not be able to hold on to? Should not, for example, the Atlantic provinces be compensated for their public investments in resources which will benefit other provinces?

These questions ultimately lead us back to issues concerning the functioning of the Canadian federal system, transfers between provinces and levels of government, the identification of appropriate public investments and zones of public intervention – issues which must remain at the top of the Canadian regional development agenda.

Notes

1. The title "Son of Living Together" was rejected on the grounds of being too undignified, on the one hand, and of employing language which could be construed as sexist, on the other.

2. Department of Regional Economic Expansion, created in 1969 and disbanded in 1982 (see Chapter 4).

3. General Development Agreements (see Chapter 4).

4. Certainly, no scholar has contributed more to this debate than Thomas Courchene. For significant references, see Chapter 12 (Yves Rabeau).

5. The "transfer dependency" theory, developed by Courchene and others, goes even further, positing that certain transfer schemes may in fact retard development, since they act as disincentives to efficient behaviour.

6. Regional per capita income disparities have been with us for a long time (see Chapter 1), pre-dating the introduction of many current regional policies and transfer schemes.

PART ONE

REGIONAL DEVELOPMENT TRENDS

Chapter 1:

Patterns of Regional Economic Development in Canada: Long-Term Trends and Issues

---

Mario Polèse

The following sections attempt to lay the empirical groundwork for the study of regional development in Canada. The provincial distribution of national income and product is examined from 1890 to 1983, followed by an analysis of trends in per capita income by province since 1926. The data presented provide a framework for formulating issues facing regional policy analysts in Canada.

Trends in Income and Product

The long-term evolution of personal income per province (as a percentage of the national total) is illustrated in Table 1. For years prior to 1926, gross value added figures are shown due to the absence of income data. The years 1910 and 1926 provide useful starting points for comparison. The first date may be said to approximate the point at which the Prairie provinces became fully integrated into the Canadian economy (thus largely completing the settlement process), while 1926 marks the last point before the Great Depression.

Over the last three-quarters of a century, certain patterns show a striking stability. The province of Quebec accounts for 24.2 percent of national income in 1983 (our most recent year), compared to 23.2 percent in 1910 (value added) and 23.6 percent in 1926. Ontario represents 38.7 percent of national income in 1983, compared to 41.3 percent in 1910 and 33.3 percent in 1926. Despite two world wars, a major depression, dramatic technological changes and varying government attempts to manage the Canadian economy, the relative economic weight of the two "central" Canadian provinces has remained largely unaltered. This is also reflected in demographic trends: Ontario and Quebec together accounted for 62.9 percent of the Canadian population in 1910; seventy-three years later their combined share was 61.6 percent. This contrasts sharply with the U.S.

experience (Bogue, 1985) where the traditional industrial heartland (the Boston, New York, Detroit, Chicago corridor, comprising fourteen states from Maine to Wisconsin) both accounts for a smaller proportion of the national total, 40.1 percent in 1980, and has witnessed a significant relative decline since 1910, when it accounted for 47.8 percent of the U.S. population.[1]

The Canadian economy is not only much smaller than that of the U.S., but also more spatially concentrated; in addition, it has manifested a lower propensity to decentralize.[2] The long-run stability of "central" Canada's share of the national whole can only be interpreted as an indication of extremely deep-seated locational advantages, which go beyond resource endowments or other natural factors.

If we limit our analysis to the last twenty-two years (post 1961), a decline in both Quebec's and Ontario's share of national income becomes visible: Quebec's share going from a high of 26.0 percent in 1961 to a low of 24.2 percent for 1983, while Ontario's share drops from a high of 41.8 percent in 1971 to 39.7 percent in 1983. The decline appears more dramatic if we consider gross domestic product data (Table 2). Product generated in one province may accrue, as income, to inhabitants of another province in the form of transfer payments or returns on investment, largely explaining the difference between the two results (Tables 1 and 2). A reading of the data would seem to suggest that Quebec's decline may be of a more structural (long-term) nature, while Ontario's decline may be largely cyclical.

While Quebec's relative decline commences in 1961 and is only slightly accelerated by the post-1973 oil crisis (correspondingly raising Alberta's relative product and income), Ontario's relative decline is almost entirely a post-1973 phenomenon and already shows signs of reversal. However, the long-run stability of certain broad regional patterns (Table 1), despite such cyclical swings, should make us wary of extrapolating trends on the basis of recent events. The effects of 1973/74 oil shock, reflected in Alberta's sudden surge upwards, make it particularly difficult to distinguish between structural and cyclical factors. It is not possible, on the basis of recent trends, to predict whether either Ontario or Quebec has embarked upon a long-term phase of relative decline.[3]

The net shift of business services, head offices and financial functions, from Montreal to Toronto (Lamonde and Polèse, 1984; Semple and Green, 1983) constitutes one of the more significant changes in the Canadian space-economy over the past two decades, perhaps in part explaining Quebec's consistently declining

Table 1
Provincial distribution of gross value added, 1890-1910, and personal income, 1926-1983, Canada (as a percentage of the national total)

Province	1890	1910	1926	1931	1936	1941	1946	1951	1956	1961	1966	1971	1976	1980	1983	Change 1926-1983
Newfoundland								1.2	1.4	1.5	1.5	1.5	1.7	1.5	1.6	
Prince Edward Island	1.8	0.8	0.5	0.4	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.4	- 0.1
Nova Scotia	8.1	5.6	3.7	3.8	3.9	3.9	4.2	3.1	3.1	3.1	2.8	2.8	2.8	2.8	2.8	- 0.9
New Brunswick	6.2	3.7	2.7	2.6	2.7	2.5	2.9	2.5	2.3	2.2	2.1	2.1	2.2	2.1	2.1	- 0.6
Quebec	26.3	23.2	23.3	26.3	26.0	25.0	24.0	24.3	24.6	26.0	25.8	24.8	25.2	24.9	24.2	+ 0.9
Ontario	49.3	41.4	38.3	42.3	41.3	42.6	38.4	38.8	39.7	40.6	40.5	41.8	39.3	38.4	38.7	+ 0.4
Manitoba	3.8	6.5	7.3	6.1	6.0	5.9	6.0	5.6	5.1	4.8	4.4	4.3	4.2	3.9	3.9	- 3.4
Saskatchewan	1.2	5.9	8.8	4.0	4.9	4.6	6.5	6.3	5.1	3.6	4.4	3.4	4.0	3.7	3.7	- 5.1
Alberta	--	4.8	7.3	5.5	5.4	5.5	7.0	7.4	7.3	7.3	7.3	7.5	8.2	9.7	10.2	+ 2.9
British Columbia	3.3	8.1	7.9	8.6	9.2	8.8	9.6	9.9	10.5	10.3	10.5	11.0	11.7	12.3	12.0	+ 4.1
Yukon & Northwest Ter.	--	--	--	--	--	--	--	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	
Canada	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

Sources: Statistics Canada, Provincial Economic Accounts, for 1926-1983 data; and Allan Green, *Regional Aspects of Canada's Economic Growth*, 1971, University of Toronto Press for 1890-1910 data.

Table 2
Provincial distribution of gross domestic product, 1961-1983, Canada
(as a percentage of the national total)

Province	1961	1966	1971	1973	1975	1977	1979	1980	1983	Change 1961-1983
Newfoundland	1.25	1.28	1.36	1.26	1.27	1.34	1.37	1.25	1.35	+ 0.10
Prince Edward Island	0.28	0.26	0.27	0.29	0.27	0.26	0.27	0.26	0.29	+ 0.01
Nova Scotia	2.64	2.38	2.49	2.49	2.37	2.38	2.34	2.16	2.34	- 0.48
New Brunswick	1.98	1.89	1.88	1.92	1.92	1.86	1.98	1.76	1.82	- 0.22
Quebec	26.28	25.98	24.84	23.94	23.64	23.50	22.93	22.79	22.49	- 3.79
Ontario	41.00	40.82	41.89	41.13	39.38	39.06	37.89	37.57	37.71	- 3.29
Manitoba	4.57	4.19	4.15	4.15	4.14	3.95	3.84	3.73	3.74	- 0.83
Saskatchewan	3.92	4.75	3.69	3.77	4.21	3.94	4.09	4.38	4.05	+ 0.13
Alberta	7.94	7.99	8.36	9.02	11.18	11.55	12.83	13.51	14.06	+ 6.12
British Columbia	9.92	10.23	10.82	11.71	11.33	11.87	12.14	12.27	11.74	+ 1.82
Yukon & Northwest Ter.	0.20	0.23	0.24	0.30	0.29	0.29	0.32	0.31	0.36	+ 0.14
Canada	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

Source: Statistics Canada, Provincial Economic Accounts.

income shares. Again, it is still too early to determine whether the relationship between Canada's two major cities will settle into a new equilibrium or whether Toronto's growth will continue to significantly surpass that of its chief rival. Over the past two decades, Quebec has undergone major social and cultural transformations, the long-term economic consequences of which are still difficult to predict.

Table 1 leaves no doubt as to the long-run relative decline of the three Maritime provinces (Nova Scotia, New Brunswick and Prince Edward Island). Their combined share of Canada's national income goes from 16.1 percent in 1890 to 10.1 percent in 1910 (gross value added), further falling to 6.9 percent in 1926, and finally settling at 5.3 percent in recent years. In terms of personal income, the Maritimes' share of the national whole seems to have stabilized over the last two decades. In terms of gross domestic product, a tendency to relative decline continues to be perceptible during the 1970s (Table 2), although this result again must be attributed in part to Alberta's "cyclical" impact on provincial income shares.[4]

Given long-term trends, it would appear unlikely that the Maritimes' share of national income in the future will deviate radically from its present position. Most of the observed relative decline occurred well before the Great Depression, with a short-lived upsurge during the second world war, especially in Nova Scotia, due to its strategic position with respect to the European theatre of war. The history of Maritime decline is well documented (see for example Acheson, 1972) and need not be elaborated upon here. It is, however, useful to note that, after several decades of decline, the total value of the region's income and product is, for example, less than a quarter of that of Quebec (or less than half that of the Montreal urban region). To the extent that market-pull is an important factor in industrial or office location, the Maritimes are truly "peripheral", not only with respect to distance (from other markets) but also with respect to the small size of their internal market.[5] Newfoundland constitutes a special case, because of its recent entry into Confederation, its location and the relative performance of its economy. On the basis of Tables 1 and 2, however, the Newfoundland economy cannot be said to be characterized by below average growth. Questions of *per capita* income are dealt with in the following section.

Outside the Maritimes, a second set of provinces have witnessed a long-term process of decline in income shares. Table 1 clearly illustrates the collapse of the Prairie wheat economy during the Great Depression. From 1926 to 1931, Manitoba's share of national income fell from 7.3 percent to 6.1 percent; Saskatchewan's from 8.8 percent to 4.0 percent; and Alberta's from 7.3 percent to 5.5 percent. Since the 1930s, Manitoba's and Saskatchewan's shares of the national whole have continued to steadily decline. A similar trend may be observed south of the border for American Prairie states such as Nebraska, the Dakotas and Iowa, whose share of the U.S. population has been steadily declining over the past half century (Bogue, 1985: 74). Economic activity and population in North America has been slowly but consistently shifting out of the Prairie heartland, a reflection of locational disadvantages rooted both in physical and human geography (e.g., distance from markets, climate, scarcity of commercial waterways, lack of major urban centres). Unless offset by strong countervailing forces, such as a particularly rich resource endowment or an especially dynamic metropolis,[6] it appears unlikely that most Prairie states or provinces will witness growth above the national average. This certainly seems to apply to Manitoba and Saskatchewan, where long-run trends suggest further decline.

Alberta is, of course, the exception. Its above average growth rate is, however, an entirely recent occurrence. Allowing for a plunge during the Depression years, Alberta's share of national income has tended to hover around 7.3 percent during the forty-five year period from 1926 to 1971. But only twelve years later, in 1983, its share had grown to 10.2 percent of the national whole. Alberta's growth appears even more dramatic in terms of gross domestic product, going from 8.4 percent to 14.1 percent.[7] Given the very recent and probably cyclical nature of these results, it is almost impossible to predict the future direction of Alberta's share of national income and product. Its heavy dependence on one resource, oil, makes long-term predictions even more hazardous. It might even be argued, given Alberta's performance prior to 1973, that it will not be able to hold on to its present share if and when resource rents from oil and natural gas begin to seriously decline. On the other hand, the recent above-average growth of all U.S. mountain states (e.g. Colorado, Wyoming, Montana) is perhaps the reflection of new trends which we do not yet fully understand, and which may in part be linked to changing locational preferences.[8]

Few trends appear as consistent as the long-term growth of British Columbia's share of national income, despite several cyclical swings. Its share has steadily grown from 7.9 percent of the national whole in 1926 to 12.0 percent in 1980. Despite British Columbia's heavy dependence on the forestry sector, which largely explains its cyclical swings, the province enjoys a unique locational advantage in the Canadian context. As the Pacific Rim states (Japan, China, South Korea and others) further consolidate their economic strength, and correspondingly increase their role as sources of trade and investment, B.C. should continue to reap an increasing "location rent", not unlike the location rent which accrues to firms based in southern Ontario or southeastern Quebec with respect to Eastern U.S. and European markets. Amenity-oriented migration undoubtedly also favours British Columbia in the long-run. If past trends are any indication, however, the growth in B.C.'s income share will continue at a fairly slow but steady rate.

Trends in Per Capita Income

The regional distribution of economic activity, illustrated in Tables 1 and 2, is of secondary interest if, in turn, it is not linked to indicators of economic well-being. The term regional disparity is generally used in reference to differences in per capita income or other social indicators. Table 3 gives the evolution of per capita income by province since 1926.

Regional differences in per capita income have been a persistent element of the Canadian landscape since such data was first collected in 1926. Again, regional patterns show surprising stability. With some exceptions, the overall ranking of provinces shows little fundamental change since the Great Depression. Ontario and B.C. systematically register per capita incomes above the national average, while those for the Maritimes (and Newfoundland after 1949) remain systematically below the national average. Nova Scotia, for example, comes closest to the national average in 1946 (an index of 85.9), an indication of its relative prosperity during World War II, but then falls back to an index of 69.1 in 1951. Quebec's per capita income over the 57 year period since 1926 has also remained systematically below the national average, although in general well above that for the Atlantic provinces; its index has historically remained within the 85.0 to 95.0 range, with the exception of 1946 when it fell to 81.5. For Manitoba, the general trend since the Great Depression also seems to be one of below-average per capita income, with a brief interlude during the post World War II years (when its indices rose to 102.9 and 100.0, in 1946 and 1951 respectively). Saskatchewan's per capita income, more than that of any other province, has a tendency to fluctuate (with a low of 44.9 following the Great Depression and a high of 107.1 in 1951, then back down to 70.8 in 1961 and up again to 99.6 in 1976), a reflection of its volatile primary sector-based economy. The general trend appears to be one of below-average

Table 3
Personal income per capita, by province, 1926-1983
(relative to the national average; Canada = 100)

Province	1926	1931	1936	1941	1946	1951	1956	1961	1966	1971	1976	1980	1983
Newfoundland	--	--	--	--	--	48.2	53.5	58.2	59.9	63.6	68.5	64.0	67.6
Prince Edward Island	56.1	51.4	55.6	46.9	58.2	54.4	58.7	58.8	60.1	63.7	68.6	71.0	74.3
Nova Scotia	67.8	75.9	79.6	77.1	85.9	69.1	71.9	77.5	74.8	77.4	78.8	79.1	80.4
New Brunswick	64.8	67.2	67.4	63.9	75.2	67.0	65.9	67.8	68.9	72.2	75.6	71.1	74.2
Quebec	84.6	94.9	92.1	86.6	81.5	83.9	86.1	90.1	89.0	88.8	93.0	94.5	92.5
Ontario	114.4	127.9	125.5	129.4	115.7	118.3	117.8	118.3	116.9	117.0	109.0	107.0	109.2
Manitoba	108.4	90.7	92.4	92.8	102.9	100.8	96.9	94.3	91.9	94.0	93.7	89.5	93.0
Saskatchewan	101.8	44.9	58.0	59.3	96.1	107.1	93.5	70.8	92.9	80.3	99.6	91.0	93.7
Alberta	113.7	77.9	76.3	80.0	107.8	111.0	104.6	100.0	100.0	98.9	102.6	111.6	108.4
British Columbia	122.1	129.9	131.9	120.9	114.9	119.2	121.1	114.9	115.9	109.0	109.1	111.3	106.0
Yukon & Northwest Ter.	--	--	--	--	--	86.7	129.8	96.6	80.7	86.8	91.9	102.9	105.9

Source: Statistics Canada, Provincial Economic Accounts.

per capita income, however. Per capita income in Alberta has tended to hover around or go above the national average since World War II. Seen in this light, Alberta's current index of 108.4 (for 1983) does not show up as a dramatic departure from past performance, although a significant increase over the 1971 index of 98.9. Also, the fact that current per capita income in Alberta constitutes a relative decline over its 1980 high of 111.6 (when it surpassed Ontario) could be an indication that per capita income there may in the future again tend toward the national average.

On the whole, those provinces which have witnessed a long-term decline in their shares of national income (i.e. the Maritimes, Saskatchewan and Manitoba) also show a long-run tendency to register below-average incomes. These are also the traditional provinces of out-migration. This should caution us against drawing rapid conclusions concerning the possible links between migration and per capita income. It is by no means evident that out-migration (or relative declining populations) will, as is sometimes assumed, necessarily cause per capita incomes to rise. Industrial performance and industrial location decisions, as has already been noted, are affected by market size and urban density levels. Besides considerations of market pull, the relative size of a local economy may also affect the level of externalities associated with scale and urban density.[9] In the case of Quebec, however, below-average per capita incomes are not associated with declining income shares; nor can Quebec's relative showing be simply explained by location, market size or absence of an urban metropolis. The per capita income gap which has historically separated Quebec and Ontario must, over the long run, be attributed to other factors.

Particular attention must be directed to the evolution of per capita incomes over the last twenty years. It is in large part during the last two decades that federal policies aimed at reducing regional disparities have been introduced or implemented. The first formal equalization payment program was introduced in 1957, but the comprehensive nature of the current program dates from 1967. The Department of Regional Economic Expansion (DREE) was established in 1969; unemployment insurance underwent a major revamping in 1971. The majority of social welfare related (transfer) programs took form during this period.

Taking the years 1961 or 1966 as our benchmarks, a definite tendency to income convergence appears. All of the Atlantic provinces show a significant improvement in their per capita incomes relative to the national average. Newfoundland, for example, moves from 59.9 percent of the national average in 1966 to 67.6 percent in 1983. Compared to per capita income in Ontario, Newfoundland's performance is even more impressive, going from 49.1 percent of that province's average to 61.9 percent in 1983. It must be assumed that federal policies have had a definite impact in reducing income disparities.

At this point, it becomes important to distinguish between changes in per capita income due solely to income transfers between regions (via federal programs) and changes in income due to improved economic performance and productivity in the regions. Table 4 gives per capita income figures for three years, 1966, 1980 and 1983, but excludes transfer income received by individuals or households.[10] Once transfer income is excluded, the tendency to convergence is reduced markedly. Relative per capita income in the four Atlantic provinces improves only marginally over 1966, Prince Edward Island being the principal recipient (its index goes from 53.9 to 64.4). Once transfer payments are excluded, Newfoundland's relative position in 1983 (54.0) is hardly different from that in 1966 (52.5). If we assume, in addition, that transfer payments generate income multiplier effects in the regions that receive them (via their impact on local demand), it can be argued that the observed trend to income convergence is almost exclusively attributable to interregional transfers, and not to "real" improvements in the relative economic performance of the regions.[11] In sum, once transfers are accounted for, regional income disparities show a high degree of stability over the long run, although a slow trend to convergence can nonetheless be ascertained. The most recent results (for 1983) again demonstrate the need to differentiate betwen cyclical swings and long-term trends. The sharp drop in British Columbia's index since 1980 (from 113.4 to 103.2, Table 4) may be interpreted either as a harbinger of a long-term trend to convergence, or simply as a reflection of the current recession.

Prospects and Issues

The picture painted by the two preceding sections may be summarized in a few words. The regional structure of the Canadian economy, and the income disparities which accompany it, show a high degree of stability over the long run. The broad regional patterns and trends are well-defined. Perhaps most striking, over seventy-five years, is the consistent weight of the Ontario and Quebec economies and the persistent income disparity between the Atlantic provinces and the rest of Canada. Major shifts occur only under exceptional circumstances, such as the Great Depression and the 1973 oil crisis. It is still too early to

TABLE 4
Personal income per capita, by province, 1966, 1980, 1983 excluding transfer income*
(relative to the national average; Canada = 100)

Province	1966	1980	1983
Newfoundland	52.5	52.5	54.0
Prince Edward Island	53.9	62.9	64.4
Nova Scotia	71.1	74.8	74.4
New Brunswick	65.1	65.3	65.9
Quebec	88.7	91.3	87.3
Ontario	117.7	109.6	110.0
Manitoba	92.7	89.3	90.5
Saskatchewan	92.1	90.0	88.7
Alberta	98.5	115.4	107.1
British Columbia	110.3	113.5	103.2
Yukon & Northwest Ter.	84.2	108.4	106.3
Canada	100.0	100.0	100.0

* Transfer income comprises items such as unemployment benefits, family allowances and other social welfare related payments.

predict whether Alberta's recent above-average oil-generated growth will continue into the future.

The obvious conclusion to be drawn from these results is that there are definite limits to the capacity of public policy to alter long-run patterns. Location does matter; geography cannot be legislated away. The locational advantages and disadvantages which accrue to the various regions of Canada, including the externalities built up over many decades, are in large measure the reflection of now well-established (often man-made) patterns and geographic realities.[12] Crudely put, given the spatial structure of the North American economy, Newfoundland and Saskatchewan are simply not very profitable locations for the production of most goods and services (unless destined for local markets). The locational differences between regions, in terms of economic costs, are such that it is unreasonable to assume that they can be totally subsidized away, unless society is willing to devote truly impressive sums of money to the cause of "balanced" regional development, however defined.[13]

A second conclusion, more troubling perhaps, is that we should not expect regional per capita income disparities to disappear in the foreseeable future. We must probably accept the persistence of income disparities, as a reflection of the "normal" locational differences between regions.[14] Given equity considerations, the question then becomes one of what we consider an acceptable level of income disparity to be. If "market" results (the figures in Table 4, for example) are judged to be unacceptable, we must then also accept the continued existence of some sort of income transfer scheme.

Many transfer schemes are currently under critical scrutiny, most notably the unemployment insurance program, whose scope in all likelihood will be reduced in the near future. A reduction in the scale of equalization payments is also to be expected, given the large current federal deficit. An in-depth analysis of the debate surrounding transfer payments and their consequences falls beyond the purview to this chapter. Two issues may be raised, however. First, it has been argued (Courchene, 1978) that current transfer schemes discourage out-migration from depressed areas. This is probably true, and we should expect more economically-motivated migration in the future if transfer schemes are indeed reduced. Given the long-run experience of many regions, however, and the Maritimes in particular, we cannot automatically assume that greater out-migration will significantly raise the relative per capita income levels of the remaining population. The economic consequences of migration may be quite different depending upon the characteristics of the regions and the populations at risk (Polèse, 1981). In Canada, substantial out-migration from certain regions must also be judged unacceptable, over the long run, for political and socio-cultural reasons. That Quebec constitutes a distinct society concerned with its weight and viability within Canada is no longer open to question, but such preoccupations also exist for other regions (French-speaking Acadia, for example). If only for linguistic reasons, it is impossible to assume that all Canadians are equally mobile. In sum, we should not expect migration to solve Canada's regional economic problems, although migration must remain an essential economic adjustment mechanism and an open path to personal improvement.[15] In policy terms, we are condemned to intervene directly in problem regions, in the form of either public investment or other programs.

A more fundamental critique of transfer payments, as has already been pointed out, is that they send out the wrong signals to workers, entrepreneurs and investors; "incorrect" migratory behaviour is simply a subset of this general argument. They prevent the market from functioning properly. Again, this is undoubtedly true. Table 5 gives relative average weekly earnings per province in 1980 and 1985. Although many factors underlie differences in wage rates, these results would suggest that workers in Atlantic Canada (and perhaps Quebec) have been

TABLE 5
Average weekly earnings, by province, 1980, 1985

Province	As a percentage of the national average 1980	1985
Newfoundland	91.1	94.3
Prince Edward Island	72.5	81.9
Nova Scotia	83.9	89.7
New Brunswick	89.5	91.4
Quebec	99.3	98.2
Ontario	98.1	100.6
Manitoba	89.3	92.9
Saskatchewan	95.8	95.2
Alberta	107.8	105.8
British Columbia	114.8	105.5
Yukon & Northwest Ter.	130.3	
Canada	100.0	100.0

Source: Statistics Canada, Catalogue 72-002 Monthly; the data refer to firms in all industries with twenty employees or more.

pricing themselves out of the market, given the locational characteristics of the regions in which they work.[16] A brief look at Table 6 confirms that lower per capita incomes in Atlantic Canada are as much (if not more) a result of lower per capita employment then of lower per capita earnings (for those who are employed). Following economic reasoning, per capita employment would rise in Atlantic Canada if wages were allowed to fall to a more realistic level. Again, this is undoubtedly correct, but the exact causal relationship between transfer payments (in their myriad forms) and "sticky" wage rates is not straightforward in all cases.[17] We cannot simply assume that the net result of lower (or improved!) transfer payments, lower wages and higher employment rates will necessarily be higher relative per capita incomes. The crafting of transfer schemes which are both economically efficient and socially equitable remains one of the chief issues facing regional policy analysts.

Looking into the future, we may expect a Canada in which the scale of interregional transfer payments is reduced (or at least stabilized), but also in which the level of direct subsidies and investments in problem regions is scaled down following the recent disappearance of DREE as a distinct federal department. The perspective of greater trade liberalization with the U.S. or other partners probably also means that Canada will in the future have less leeway in the implementation of (regional) subsidy schemes to industry, considering both the normal pressures of increased international competition and the legal constraints which formal trade agreements generally place on the partners involved. Crystal ball gazing is always a hazardous exercise, but given what has just been said, we should not expect major shifts in macro-economic development patterns defined at the level of provinces or regions, especially with respect to disparities in per capita income.

The abandonment of the DREE experience may in part be attributed to the perceived failure to reverse long-standing macro-trends at the level of regions or provinces. Having observed the well-established character of Canada's regional development patterns, it seems unreasonable, in retrospect, to have expected visible short-run macro-economic results from what was, after all, a fairly modest attempt at direct regional policy.[18] Macro-economic goals are perhaps not appropriate for direct regional policy.

It must also be pointed out that direct (explicit) regional policies, such as those implemented by DREE, or more recently by DRIE, form only a small part of the total "tool kit" of programs

Table 6
Population and employment, by province, 1981

Province	(1) Population 1981	(2) Population ages 15-65	(3) Labour force	(4) Employment	Labour force participation rate (3)/(2)	Unemployment rate (October)	Employment/ population (4)/(1)	Relative to the national average
Newfoundland	567,681	370,000	218,000	185,000	58.9	15.2	32.6	72.1
Prince Edward Is.	122,506	78,000	54,000	49,000	69.2	9.9	40.2	88.9
Nova Scotia	847,442	548,000	365,000	328,000	66.6	10.2	38.7	85.6
New Brunswick	696,403	458,000	303,000	269,000	66.1	11.3	38.6	85.3
Quebec	6,438,403	4,368,000	3,026,000	2,685,000	69.3	10.7	41.7	92.2
Ontario	8,625,107	5,829,000	4,502,000	4,220,000	77.2	6.3	48.9	108.2
Manitoba	1,026,241	646,000	492,000	466,000	76.2	5.2	45.4	100.4
Saskatchewan	968,313	606,000	451,000	432,000	74.4	4.1	44.6	98.7
Alberta	2,237,724	1,451,000	1,141,000	1,101,000	78.6	3.5	49.2	108.8
British Columbia	2,744,467	1,798,000	1,351,000	1,257,000	65.5	6.9	45.8	101.3
Yukon & Northwest Ter.	68,894	n/a	n/a	n/a				
Canada	24,343,181	16,152,000	11,883,000	10,993,000	73.6	7.5	45.2	100.0

Source: Statistics Canada, catalogue 71-001 Monthly, October 1981.

and policies at the disposal of the federal government and the provinces. The combined impact of other economic and social policies has certainly been much greater in shaping the spatial configuration of the Canadian economy. A full-blown regional development policy for Canada would take into account the regional consequences of all federal and provincial programs, but it appears entirely unrealistic to ask all programs to subordinate their goals to regional policy objectives. Governments will necessarily pursue policies with conflicting goals. All we can ask for is better coordination and an awareness of the trade-offs at stake. We must accept that direct regional policy is only one of the many policies, and not necessarily the most important one, influencing regional development in Canada.

It would, however, be incorrect to conclude that regional policy is of no consequence, that DREE and similar attempts have had no impact upon the communities involved.[19] Nor should we assume that successful entrepreneurship is impossible in outlying areas, given adequate policies. Direct regional policies in the future will probably place greater emphasis on local development and be more micro-economic in nature, attempting to find new ways to facilitate local access to information and capital (Coffey and Polèse, 1985). Such policies, however, must not be seen as a substitute for transfer schemes and direct public investment. Nor should we necessarily judge their success on the basis of short-run macro-economic trends.

In conclusion, let us stress again the importance of "location" as an aspect of economic reality. Each location or community carries with it unique attributes which, for better or for worse, must in part be accepted as given. Distance from other regions and places implies economic and social costs not only in terms of transportation, but also in terms of interpersonal communication, time and effort. In Canada, language will always remain an important barrier to interaction. Yet, place and community remain essential attributes of our existence, in part defining the range of our opportunities. One no more chooses one's family than one chooses one's place of birth or one's upbringing. It has been said that true social equality is impossible without eliminating the family; we might equally add that true equality is not possible without eliminating "place". Since place cannot be eliminated, since equity and efficiency must remain necessary social goals, the search for better regional policies will continue.

Notes

1. It is likely that the decline in terms of income shares would be even more pronounced since per capita income (relative to the national average) has tended to decline in the "heartland" states (Bogue, 1985: 566).

2. It is not impossible that small-size and spatial concentration tend to reinforce each other, especially for firms serving national markets, where economies of scale and indivisibilities are important.

3. As Termote's analysis shows (Chapter 2 of the present volume), demographic indicators are, it would appear, both more explicit and also less favourable concerning Quebec's future evolution. It remains to be seen how economic and demographic factors will interact in the future.

4. The cyclical hypothesis is supported by the upturn in the shares of the three Maritime provinces between 1980 and 1983 (Table 2).

5. A circular causation argument may again be evoked at this point: small markets causing slower growth, which in turn fosters a further decline in market shares.

6. The remarkable success of Minneapolis-St. Paul as a corporate business centre demonstrates that locational disadvantages can be overcome. The relative success of the Twin Cities is to be attributed, it would seem, to an extraordinarily dynamic entrepreneurial class, heavy state investment in education and a particular (Nordic!) work ethic (Adams, 1980).

7. The difference between gross domestic product and personal income gives an approximate idea of the income flowing out of Alberta in the form of transfers or return on capital.

8. Looking at Western Europe, and France in particular, Aydalot (1984) notes a general shift in population and economic activity to peripheral or semi-rural areas, which may in part be explained by a greater relative preference for natural amenities (e.g., mountains, the seashore, climate).

9. Such "externalities" are often grouped under the heading of "agglomeration economies", which include such things as the externalities associated with the juxtaposition of firms, the availability of urban services and infrastructures, or other advantages accruing to firms and residents of larger urban agglomerations. Readers unfamiliar with these concepts may consult Hoover and Garratoni (1984).

10. It should be noted that Table 4 does not necessarily factor out the precise effect of federal transfer schemes, to the extent that provincial transfer programs (not, in turn, funded by federal intergovernmental transfers) may vary between regions.

11. It may also be argued, as does Courchene (1978), that certain transfer schemes disturb the normal market mechanisms, sending out the wrong signals to local politicians, firms and workers, thus preventing them from adjusting as they should to prevailing economic conditions. We shall come back to this point shortly. With the data in Tables 3 and 4, we can only observe that transfers account (in actual numbers) for a substantial part of the reduction in income disparities since 1966, but we cannot speculate what would have happened in the absence of those transfers. Given the impact of the Great Depression and World War II, it is extremely difficult to extrapolate on the basis of data prior to 1961.

12. Most "externalities", e.g. universities, infrastructure, labour force characteristics, and so forth, are the cumulative result of investments over many years.

13. The present Department of Regional Industrial Expansion (DRIE) scheme, under which federal aid to industry is modulated according to the current economic characteristics of the census divisions in which the firm is located, does not constitute a radical departure from past policies (at least not in terms of the global level of aid), although it provides a more coherent framework for implementation. It should also be noted that the level of aid available in a particular census division is determined on the basis of current economic indicators (e.g., unemployment rates), and not on the basis of its proximity or distance from other places. For this kind of policy, the appropriate definition of "designated" areas remains a difficult issue.

14. Following economic reasoning, disparities also play a useful role, sending out signals to economic agents as to how they should behave if they are to maximize their incomes.

15. It appears self-evident that government must not prevent those from migrating who wish to; it may even help them, as is current policy.

16. In simple terms, one would expect a much lower relative wage rate in Newfoundland, given the other additional costs of operating there.

17. The implicit argument is that the various social welfare schemes discourage people from accepting lower paying jobs, in essence permitting them to remain unemployed. It must be noted that many other factors contribute to homogenized "national" wage rates: federal government employment, labour unions, large organizations, and so forth. The recent rise of small business, especially in outlying regions, may in part be interpreted as a reaction to these various institutional barriers to flexible labour markets.

18. See Lithwick (Chapter 4) and Savoie and Chénier (Chapter 13) for a more detailed discussion of the DREE experience.

19. It is perhaps significant that the most visible improvement (Table 4) is that for the smallest province, Prince Edward Island. At the level of smaller regions, government actions may be determinant, but their impact will not necessarily appear in macro-data.

References

Adams, John, 1980. *The Minnesota Economy*. Minneapolis: Bureau of Business Research, University of Minnesota.

Acheson, T.W., 1972. "The National Policy and the Industrialization of the Maritimes, 1880-1910". *Acadiensis*, 1,2: 3-28.

Aydalot, Philippe, 1984. "La crise économique et l'espace : recherche sur les nouveaux dynamismes spatiaux". *Canadian Journal of Regional Science*, 7,1: 9-31.

Bogue, Donald, 1985. *The Population of the United States: Historical Trends and Future Projections*. New York: Collier-MacMillan.

Coffey, W.J. and M. Polèse, 1985. "Local Development: Conceptual Bases and Policy Implications". *Regional Studies*, 19,2: 85-93.

Courchene, Thomas, 1978. "Avenues of Adjustment: The Transfer System and Regional Disparities". In M. Walker (ed.), *Canadian Confederation at the Crossroads*. Vancouver: The Fraser Institute, 145-186.

Hoover, E.M. and F. Garratoni, 1984. *An Introduction to Regional Economics*, (3rd Edition). New York: Alfred Knopf.

Lamonde, P. and M. Polèse, 1984. "L'évolution de la structure économique de Montréal 1971-1981 : désindustrialisation ou reconversion". *L'Actualité économique*, 60,4.

Polèse, Mario, 1981. "Regional disparity, migration and economic adjustment: a reappraisal". *Canadian Public Policy*, 7: 519-525.

Semple, R.K. and M.B. Green, 1983. "Interurban Corporate Headquarters Relocation in Canada. *Cahiers de Géographie du Québec*, 27,72.

Chapter 2:

The Growth and Redistribution of the Canadian Population

Marc G. Termote

Introduction

Canada has recently been experiencing significant changes in its regional demographic growth patterns. Along with a considerable and regionally unequal decline in fertility, mortality and international immigration, remarkable reversals in interprovincial migration flows have occurred over the last two decades.

In this paper, three questions will be addressed:

(1) How is each provincial population behaving demographically – that is, reproducing itself, migrating and dying?
(2) To what extent are these provincial populations "living together", demographically speaking?
(3) What may we expect for the next decades?

These three questions correspond to the three sections of this paper.

Regional Disparities in Demographic Behavior

By looking at the relative importance of each component of growth in each province (because of small numbers and data unreliability, the Yukon and the Northwest Territories are not included), one may obtain a first indication of the principal changes in the Canadian regional growth pattern over the last three census periods. The figures presented in Table 1 clearly show that the regional pattern of the 1970s is characterized by an important decline in the "demographic power" of the two central provinces (Quebec and Ontario), which until the 1960s dominated Canada's demographic structure. At the end of the 1970s both provinces represented only 42 percent of Canada's total increase (down from 64 percent at the end of the 1960s), while containing 63 percent of the total population. The difference between

Table 1
Components of demographic growth: 1966-1971, 1971-1976, and 1976-1981

Period Province	Total increase (thousands)	Natural growth (thousands)	Net inter-provincial migration (thousands)	Net inter-national migration (thousands)
1966-1971				
Newfoundland	29	49	-18	-3
Prince Edward Island	3	5	-1	-1
Nova Scotia	33	37	-9	4
New Brunswick	18	35	-9	-9
Quebec	247	289	-78	36
Ontario	742	373	61	308
Manitoba	25	49	-34	10
Saskatchewan	-29	51	-78	-2
Alberta	165	105	27	32
British Columbia	311	88	139	84
TOTAL	1543	1083	---	461
1971-1976				
Newfoundland	36	43	-7	-1
Prince Edward Island	7	5	3	-1
Nova Scotia	40	32	7	1
New Brunswick	43	33	12	-2
Quebec	207	229	-62	40
Ontario	561	326	-63	299
Manitoba	33	45	-29	17
Saskatchewan	-5	38	-32	-11
Alberta	210	96	68	47
British Columbia	282	83	105	94
TOTAL	1413	930	---	484
1976-1981				
Newfoundland	10	37	-23	-4
Prince Edward Island	4	5	0	-0
Nova Scotia	19	28	-10	1
New Brunswick	19	29	-10	-0
Quebec	204	263	-141	82
Ontario	361	303	-92	150
Manitoba	5	40	-50	15
Saskatchewan	47	46	-7	8
Alberta	400	124	211	65
British Columbia	278	93	122	63
TOTAL	1346	967	---	380

Source: Statistics Canada and author's estimates. Net international migration figures have been obtained as residuals.

Note: Because of rounding, the total figures may not be equal to the sum of the parts.

Quebec and Ontario, in this respect, is that Ontario's decline is quite recent, while Quebec's decline is mainly the continuation of a long-term process. The main beneficiaries of the decline of the two central provinces are the two westernmost provinces: the share of Alberta and British Columbia in Canada's population growth increased from 31 percent in 1966-1971 to 50 percent in 1976-1981.

The relative contribution of each component of growth differs considerably among provinces and from one period to another. In 1966-1971, natural growth was the only source of growth in each of the four Atlantic provinces (except for Nova Scotia, which benefited also from international migration), while in 1971-1976, three of these provinces also had a positive net interprovincial migration (only Newfoundland was still losing population by interprovincial migration, but by a relatively small amount). In 1976-1981, however, natural growth was again the sole source of population increase in the Atlantic provinces: a negative interprovincial migration balance (at even higher levels than in 1966-1971) combined with a significant drop in natural growth led to a sixty percent decrease in total population growth (from 120,000 to 52,000).

In 1966-1971, Manitoba and Saskatchewan were in a situation close to the one observed in the Atlantic provinces, and into the 1970s natural growth remained their main source of increase (with Manitoba benefiting also from international migration). The main difference, however, is that as far as interprovincial migration is concerned, Manitoba behaved like the Atlantic provinces (improvement during the early 1970s, followed by a strong deterioration during the second half of the decade), while Saskatchewan experienced a continuous amelioration.

Compared to Ontario, Quebec's total population increase remained relatively stable (total increase in absolute numbers declined by 17 percent between 1966-1971 and 1976-1981, compared to a 50 percent drop for Ontario); during the 1970s Quebec was able to neutralize an important deterioration in its interprovincial migration balance with a steady improvement in its international migration balance and in its natural growth. Ontario, however, experienced a steady decline for all three sources of growth: natural growth dropped from 373 to 326 to 303 thousand; net interprovincial migration from +61 to -62 to -92 thousand; and net international migration from 308 to 299 to 150 thousand.

During the same 1966-1981 period, Alberta experienced a steady increase for all three sources of growth (except a small decline in natural growth between the first two census periods). The increase in the migration balance is particularly spectacular: net interprovincial migration increased from 27 to 63 to 211 thousand, and net international migration increased from 32 to 42 to 65 thousand. Finally, the figures for British Columbia did not vary much over the three five-year periods.

Examining each component of growth separately, one may observe that between 1966-1971 and 1971-1976, natural growth declined in all ten provinces, but that between 1971-1976 and 1976-1981, Quebec and the three westernmost provinces experienced an increase in natural growth. At least for the latter cases, this may be considered as an indirect consequence of migration.

As far as the interprovincial migration pattern is concerned[1], there was, between 1966-1971 and 1971-1976, a clear reversal in favor of the four eastern (Atlantic) provinces and of the three Prairie provinces. This pattern was also much more balanced: in 1971-1976, there were equal numbers of losers and gainers, with losers losing less and gainers gaining less. Between 1971-1976 and 1976-1981, a new reversal took place, this time characterized by a strong deterioration of the eastern provinces (which again experienced important losses) and, as a corollary, a marked westward shift of the population. More precisely, this new reversal benefited only the three westernmost provinces. Thus, while between 1966-1971 and 1971-1976, eight provinces improved their interprovincial migration balance, only three did so between 1971-1976 and 1976-1981. All gains from interprovincial migration are now concentrated in only two provinces, Alberta and British Columbia. These two westernmost provinces are also the only ones that benefited from all three sources of growth during each of the three sub-periods considered. The result is that half of Canada's demographic growth is now concentrated in these two provinces, with migration being the main component of growth (68 percent in 1976-1981, up from 59 percent in 1966-1971). As will be seen later, however, there are some strong indications that a new reversal in the interprovincial migration pattern is presently taking place.

Of course, the absolute numbers of Table 1 do not allow for an interregional comparison of demographic behaviour. A first step in this direction is to calculate rates and to disaggregate natural increase into natality (crude birth rate) and mortality (crude death rate), and migration increase into in-migration and out-migration. (As far as international migration is concerned, only rates of net migration will be presented, data on international emigration flows being either non-existent or unreliable). These various rates are presented in Table 2.

Canada's annual demographic growth rate dropped from 1.5 percent in 1966-1971 to 1.1 percent in 1976-1981, but the level and the evolution of this total growth rate were markedly different from one province to another. Between 1966 and 1971, the rates ranged from -0.6 percent (Saskatchewan) to 3.1 percent (British Columbia); between 1971 and 1976, from -0.1 percent (Saskatchewan) to 2.4 percent (Alberta and British Columbia); and between 1976 and 1981, from 0.1 percent (Manitoba) to 3.9 percent (Alberta). During each of the three census periods considered, Alberta and British Columbia showed the highest growth rates, always markedly above the Canadian average. Seven provinces experienced a continuous decline of their growth rate, and this decline was particularly strong during the 1970s. Only two provinces showed a steady increase in their growth rate: Saskatchewan (from -0.6 to -0.1 to 1.0 percent) and Alberta (from 2.1 to 2.4 to 3.9 percent). The growth rate of Prince Edward Island dropped only during the 1970s, after a rapid increase between the two first sub-periods.

The birth and death rates vary relatively slightly between provinces and between periods. In 1976-1981, for instance, the regional birth rates varied from 14 to 19 per thousand, and the regional death rates from 6 to 9 per thousand. Net international migration rates may offer wide regional and temporal variations, but as these rates are relatively low, they will in most cases not significantly affect the total increase. Moreover, it should be stressed that these rates are obtained as residuals, so that their significance is rather disputable.

Migration

Much more pronounced are the regional disparities in the level and evolution of interprovincial migration rates. The figures of Table 2 show how much the annual propensity to out-migrate may vary from one province to another. In 1976-1981, the range goes from 7 per thousand (Quebec) to 22 per thousand (Manitoba). Yet, compared with the two previous periods, this range has been reduced significantly, with the extreme values being 6 and 28 per thousand in 1966-1971, and 5 and 22 per thousand in 1971-1976.

It should be recalled here that these average yearly rates refer to five-year (census) migrants, thus excluding multiple migration as well as migrations made by persons who died or left Canada during the period. On the basis of what is known about the ratio between migrations and migrants over a five-year

Table 2
Components of demographic growth. Annual rates (in 0/00), 1966-1971, 1971-1976, 1976-1981.

Period	Total Increase	Crude Birth Rate	Crude Death Rate	Crude Migration Rate		
				Inter-provincial		International
Province				In	Out	Net
1966-1971						
Newfoundland	11.4	25.5	6.2	7.4	14.8	-0.5
Prince Edward Island	5.5	18.7	9.2	20.0	22.2	-1.8
Nova Scotia	8.5	18.3	8.6	15.6	18.1	1.3
New Brunswick	5.8	19.1	7.8	15.5	18.5	-2.5
Quebec	8.4	16.5	6.7	3.6	6.3	1.3
Ontario	20.2	17.8	7.6	8.3	6.6	8.3
Manitoba	5.1	18.2	8.1	14.9	22.4	2.5
Saskatchewan	-6.2	18.7	7.9	10.2	28.1	-0.0
Alberta	21.3	20.0	6.4	20.6	16.8	3.9
British Columbia	30.7	17.0	8.3	23.3	8.9	7.6
TOTAL	14.9	17.8	7.4	10.3	10.3	4.5
1971-1976						
Newfoundland	13.3	22.2	6.1	9.8	12.2	-0.4
Prince Edward Island	12.2	17.0	9.1	24.9	19.7	-0.9
Nova Scotia	10.1	16.4	8.5	17.1	15.2	0.3
New Brunswick	13.6	17.8	7.8	18.2	14.2	-0.4
Quebec	6.9	14.4	7.0	3.4	5.4	1.5
Ontario	14.1	15.6	7.5	6.2	8.0	7.8
Manitoba	6.7	17.2	8.2	14.2	20.3	3.8
Saskatchewan	-1.1	16.6	8.3	14.5	21.6	-2.3
Alberta	24.2	17.4	6.4	24.1	15.8	4.9
British Columbia	24.2	15.1	8.0	19.9	10.5	7.7
TOTAL	13.1	15.8	7.4	9.9	9.9	4.7
1976-1981						
Newfoundland	3.6	18.7	5.7	7.6	15.7	-1.3
Prince Edward Island	6.7	16.2	8.5	19.1	19.0	-1.1
Nova Scotia	4.5	14.8	8.2	14.7	17.1	0.3
New Brunswick	5.5	16.0	7.6	14.0	16.9	-0.0
Quebec	6.4	15.2	6.9	2.6	7.0	2.5
Ontario	8.5	14.5	7.3	6.7	8.9	3.5
Manitoba	1.0	16.0	8.1	12.0	21.9	3.0
Saskatchewan	9.9	17.7	8.0	15.8	17.2	1.6
Alberta	39.3	18.0	5.8	36.6	15.9	6.4
British Columbia	21.3	14.4	7.2	19.8	10.4	4.7
TOTAL	11.4	15.3	7.1	10.8	10.8	3.2

Notes: 1. Net international migration rates are obtained as residuals.
2. Because of rounding, the rates presented in this table do not necessarily correspond to the absolute figures produced in Table 1.

period in Canada, these rates should be multiplied by about two in order to obtain an estimate of the annual rate of out-migration.

During the whole 1966-1981 period, Quebec always showed the lowest propensity to out-migrate, followed by Ontario, while the highest rates were always observed in Prince Edward Island, Manitoba and Saskatchewan. It is obvious that a large part of these regional variations in the out-migration rate is due to the differences in size and location of the regions. A small region like Prince Edward Island, close to three other provinces, will, all other things being equal, show a much higher out-migration rate than a large region like Ontario. Manitoba and Saskatchewan's location, between the two leading growth poles of Canada (Alberta and Ontario) also explains a great deal of their high rates of out-migration.

In the case of Quebec, one should also consider linguistic and cultural distance. Were it not for the very high propensity of the English-speaking Quebecers (in 1966-1971 and 1971-1976, the out-migration rate of this group was about 13 times higher than the rate of the French group; in 1976-1981, 23 times higher), the already very low rate of out-migration of this province would become almost negligible; in 1976-1981, the annual out-migration rate of the French-speaking Quebecers was 1.3 per thousand, compared to the 7.0 per thousand observed for the whole population of Quebec. Note that the 1976-1981 rate for Quebec is only slightly above the 1966-1971 rate. One may conclude that the long-term annual out-migration rate of Quebec (that is, the one obtained in the absence of peculiar political events) lies around 5 per thousand (as in 1971-1976). When political conditions are unstable, the rate increases slightly above this low level (6 per thousand in 1966-1971, 7 per thousand in 1976-1981). On the whole, Quebec seems, as far as population exchanges are concerned, disconnected from the rest of Canada, except for the English-speaking population of this province.

Two provinces (Prince Edward Island and Saskatchewan) experienced a decline in their out-migration rate over the whole 1966-1981 period. Both had – and still have – particularly high rates. Only one province, Ontario, showed an increase over the whole period. All other provinces (except British Columbia) experienced an increase of their rates between 1971-1976 and 1976-1981, after having had declining rates between 1966-1971 and 1971-1976.

On the whole, the evolution of in-migration rates is remarkably correlated with the evolution of out-migration rates; that is, when the latter decrease, the former increase, and inversely. Saskatchewan is the most striking example in this respect. It is also clear from the figures of Table 2, that both in- and out-migration are related; that is, regions with low (high) immigration rates tend to be also regions with low (high) out-migration rates. This is particularly true for the Atlantic and central provinces. Moreover, the provincial hierarchy with respect to the level of in- and out-migration rates did not change much over time, despite the marked reversals in net migration rates (obtained as the difference between the in- and out-migration rates produced in Table 2).

In most provinces, these reversals were indeed considerable and rather abrupt. Two extreme cases are Saskatchewan and Alberta. Saskatchewan experienced a comfortable and steady increase of its in-migration rate (from 10.2 to 14.5 to 15.8 per thousand) combined with a continuous drop of its out-migration rate (from 28.1 to 21.6 to 17.2 per thousand), so that its net migration rate, while still being negative, increased markedly, from -17.9 per thousand in 1966-1971 to -4.1 per thousand in 1976-1981. During the same period, Alberta's net migration rate increased from 3.9 to 20.7 per thousand. On the other hand, Ontario's out-migration rate increased relatively slightly over the 1966-1981 period, from 6.6 to 8.9 per thousand, while its in-migration rate dropped only from 8.3 to 6.7 per thousand; thus, the net migration rate of this province declined relatively slowly (from 1.7 to -2.2 per thousand).

To interpret these reversals in the interprovincial migration pattern, it is worth investigating whether the changes in the propensity to out-migrate from a specific province is caused by a modification of a few particular flows, or whether it is a general phenomenon, that is, experienced with respect to most of the regions of destination. In order to answer these questions, let us consider the figures in Table 3, which presents the annual migration rates between each origin-destination pair, for the two last census periods. (For the sake of clarity, the 1966-1971 figures had to be left out of the Table, but will be used in the discussion).

Between 1966-1971 and 1971-1976, Ontario underwent an increase in its out-migration rate to all provinces of destination (except Quebec), while all provinces of origin (except Quebec) also had a lower rate of out-migration to Ontario. This province thus showed simultaneously a lower capacity to attract people from all over the Canadian territory, and a lower capacity to retain its own people. Considering the demographic weight of this province, and its central location within Canada, one may conclude that Ontario has played a crucial role in the reversal of the Canadian internal migration pattern. In fact, the slightest

Table 3
Total ("crude") migration rates (per thousand) between provinces, 1971-1976 and 1976-1981 (annual averages)

From To:	Nfld	PEI	NS	NB	Q	O	M	S	A	BC
Newfoundland	-	0.2 (0.2)	2.4 (2.1)	0.9 (1.1)	1.0 (1.0)	5.5 (5.5)	0.6 (0.7)	0.3 (0.2)	3.6 (0.7)	1.3 (0.9)
Prince Edward Island	0.5 (0.8)	-	4.7 (5.1)	2.7 (3.3)	0.6 (0.7)	4.3 (5.2)	0.4 (0.8)	0.4 (0.3)	4.2 (2.2)	1.2 (1.4)
Nova Scotia	0.9 (1.0)	0.6 (0.7)	-	2.5 (2.9)	0.9 (1.2)	5.5 (5.5)	0.5 (0.6)	0.4 (0.3)	3.9 (1.5)	2.0 (1.7)
New Brunswick	0.5 (0.5)	0.5 (0.7)	3.1 (3.1)	-	2.4 (2.6)	4.6 (4.3)	0.5 (0.5)	0.3 (0.3)	3.7 (1.1)	1.4 (1.2)
Quebec	0.1 (0.1)	0.0 (0.0)	0.2 (0.3)	0.4 (0.4)	-	4.3 (3.4)	0.1 (0.2)	0.1 (0.1)	1.1 (0.4)	0.7 (0.6)
Ontario	0.3 (0.4)	0.1 (0.2)	0.6 (0.8)	0.4 (0.6)	1.3 (1.8)	-	0.6 (0.7)	0.4 (0.3)	3.4 (1.4)	2.0 (1.8)
Manitoba	0.2 (0.1)	0.0 (0.1)	0.4 (0.5)	0.3 (0.3)	0.4 (0.7)	4.2 (5.1)	-	3.3 (3.4)	7.7 (5.3)	5.4 (4.8)
Saskatchewan	0.0 (0.0)	0.1 (0.0)	0.2 (0.2)	0.1 (0.2)	0.2 (0.3)	1.7 (2.2)	1.9 (2.9)	-	8.9 (10.1)	4.0 (5.7)
Alberta	0.1 (0.1)	0.1 (0.1)	0.4 (0.4)	0.2 (0.2)	0.4 (0.5)	2.9 (2.5)	1.0 (1.1)	2.4 (2.4)	-	8.4 (8.6)
British Columbia	0.1 (0.1)	0.0 (0.0)	0.3 (0.4)	0.2 (0.2)	0.4 (0.5)	2.3 (2.5)	0.6 (0.9)	0.9 (1.0)	5.6 (4.9)	-

Notes:
1. Figures in brackets refer to 1971-1976.
2. Migration rates are obtained by dividing one-fifth of the 1976-1981 (1971-1976) migrants enumerated at the 1981 (1976) census by the arithmetic mean of the population enumerated in 1976 and 1981 (1971 and 1976) in the province of origin. Because of rounding, the sum of the destination-specific rates presented in this Table is not necessarily equal to the corresponding total out-migration rate produced in Table 2.

variation in Ontario's behaviour profoundly affects all other provinces.

Each of the four Atlantic provinces shows a higher migration rate with respect to Ontario than to Quebec, which is closer. Even with respect to Alberta and British Columbia the rate of these four provinces is, in most cases, significantly larger. This shows that physical distance does not always play a dominant role in interprovincial migration behaviour. Once the decision has been made to move over a long distance (and in Canada interprovincial distances are in most cases rather "long"), the distance itself is of relatively little importance. Cultural distance, however, may affect the choice of the province of destination; migrants from the English-speaking Atlantic provinces tend to bypass the predominantly French-speaking Quebec.

The migration patterns discussed so far have been obtained from census data. This implies that we have no information on the annual evolution of migration, and, more particularly, on the migration behaviour over the most recent years. In order to obtain this information, we may, however, use annual migration estimates made by Statistics Canada. Table 4 presents the annual rates of net interprovincial migration. On the whole, these annual estimates are consistent with the census data. The fact that for a given census period these annual rates lead to higher figures than the ones observed from the census, is quite normal. These estimates refer indeed to migrations, while the census data refer to migrants; due to international emigration, death among migrants, under-enumeration, and above all multiple migration during the census period, it should not come as a surprise that the number of migrants is inferior to the number of migrations.

The most striking information which may be derived from Table 4 refers to the evolution of migration over the recent years. The figures for the last four years (1981-1985) seem indeed to indicate that during the first half of the decade, a new reversal (the third one since the beginning of the 1970s) could be taking place. This new reversal is characterized by a remarkable improvement of the migration balance of the Atlantic provinces, with the net migration rate being now positive in three of them, a situation analogous to the one observed during the first half of the 1970s. While the 1971-1976 period was characterized by a strong deterioration of Ontario's migration balance, however, this time Ontario is also one of the main beneficiaries of the reversal, along with Manitoba and Saskatchewan; these three provinces apparently now have a positive net migration rate. If

Table 4
Net interprovincial migration rates (percent), by province, 1961-1985

Year	Nfld	PEI	NS	NB	Q	O	M	S	A	BC
1961-1962	-1.2	8.5	-3.1	-5.3	0.3	0.7	-0.4	-10.8	5.4	1.3
1962-1963	-3.6	-5.9	-6.3	-9.2	-0.1	2.0	-0.9	-12.1	3.6	5.0
1963-1964	-7.2	-5.7	-7.1	-11.0	-1.1	3.0	-3.7	-6.8	-0.3	8.4
1964-1965	-10.4	-14.7	-10.2	-7.7	-1.1	3.6	-6.5	-6.1	-2.9	11.0
1965-1966	-9.3	-9.3	-9.3	-9.0	-1.6	3.7	-12.9	-9.2	-6.6	18.8
1966-1967	-9.0	-6.2	-7.6	-9.7	-2.5	3.4	-11.7	-10.5	0.0	15.9
1967-1968	-4.4	-1.0	-2.5	-2.9	-2.7	1.7	-6.9	-8.8	5.0	8.7
1968-1969	-2.5	-5.4	-1.7	-6.2	-3.2	2.1	-6.3	-13.7	5.7	10.1
1969-1970	-15.0	-14.4	-4.7	-11.9	-6.0	7.1	-9.4	-26.7	5.7	13.6
1970-1971	-7.2	2.0	-4.9	-0.7	-6.3	6.2	-7.5	-25.7	4.3	9.5
1971-1972	1.7	2.6	-0.5	1.0	-3.4	1.8	-8.4	-20.7	2.2	12.4
1972-1973	-1.0	8.2	5.4	3.2	-3.3	0.1	-5.8	-17.7	3.4	12.2
1973-1974	-6.2	4.4	1.6	2.2	-2.5	-0.4	-1.6	-12.8	1.3	13.2
1974-1975	0.9	12.1	2.8	9.3	-1.5	-3.7	-6.9	0.4	13.1	5.0
1975-1976	1.1	5.5	4.8	9.9	-2.0	-2.6	-4.2	6.4	13.8	-1.8
1976-1977	-7.4	1.3	-1.0	-0.1	-4.2	-0.8	-3.5	3.5	18.9	2.0
1977-1978	-7.7	5.9	-0.5	-2.0	-7.4	1.0	-4.5	-1.8	17.0	7.0
1978-1979	-6.0	-0.6	-0.4	-1.7	-4.9	-0.5	-10.4	-3.1	16.9	8.7
1979-1980	-6.4	-2.9	-3.2	-4.0	-4.7	-2.6	-13.5	-4.7	20.2	15.5
1980-1981	-6.3	-10.2	-3.4	-7.2	-3.6	-3.9	-9.2	-4.0	20.7	14.2
1981-1982	-10.0	-7.0	-2.3	-4.1	-4.0	-0.7	-2.6	-0.3	16.3	3.2
1982-1983	3.2	4.4	4.5	5.1	-3.8	2.7	2.5	3.7	-5.0	-0.5
1983-1984	-3.5	6.4	4.4	2.5	-2.7	4.1	0.3	2.1	-13.6	2.3
1984-1985	-6.1	5.0	2.8	0.0	-1.4	4.2	1.2	-0.3	-11.7	-0.8

Source: Statistics Canada, catalogue 91-210, Annual, vol. 1, November 1984, Table 10, p. 80. Data for 1983-1984 and 1984-1985, the latter unpublished and preliminary, as well as the revised data for 1982-1983, were kindly provided by R. Raby, from Statistics Canada.

Note: Rates were obtained by dividing the figures produced in Table 10, catalogue 91-210, Annual, vol. 1, November 1984, p. 80, by the population of the corresponding year, as given in Table 1, p. 39 of the same catalogue (the 1984 population figures are unpublished estimates obtained from Statistics Canada). Years are census years.

we add to this Quebec's migration balance, which seems to be improving relatively rapidly (but still on the negative side), then it becomes clear that this new reversal is dominated by a strong eastward movement of the population. Indeed, there are only two losers in this reversal, and they are the two westernmost provinces: over the last five years, Alberta's annual net rate dropped from 2.1 to -1.2 percent, and British Columbia's from 1.4 to -0.1.

The problem with these annual migration estimates is that the estimation procedure is not consistent. Until 1976, migration estimates were obtained from data on family allowance transfers. Between 1976 and 1984, these estimates were based on taxation files. But for the last year only preliminary data, based upon family allowance transfers, are available. All this implies that one should be highly cautious in interpreting the most recent evolution of the migration rates.

It is clear that there has been a significant decline in Alberta's and British Columbia's attraction power, but one may wonder whether the figures of Table 4 correctly reflect the real amplitude of the decline of "the West". It would in any case seem too rash to use the estimates obtained for the last years (with two different procedures), as a base for projecting the future migration pattern. The (preliminary) estimates for 1984-1985 seem indeed to indicate that the decline of "the West" could be close to its end: all four Atlantic provinces seem to have declining rates of net migration, while the three Prairie provinces seem to have improved their migration balance over the last two years. It is highly probable that this most recent evolution is to be related to the end of the "return migration" movement which followed Alberta's "oil boom" of the 1974-1981 period. It should also be mentioned that Quebec seems to have totally recovered from its 1976-1981 migration hemorrhage: its 1984-1985 net interprovincial migration rate (while still slightly negative) is the highest one for the last 20 years.

Reproduction

The rates used until now in describing the regional pattern of natality, mortality and migration, are "crude" rates, that is, they are not disaggregated by age. It is clear, however, that in order to analyze regional disparities in demographic behaviour, one should eliminate regional differentials in the age structure of the population "at risk". This is done by computing age specific rates, so that by summing them (and multiplying the result by five, the width of the age groups), one obtains a figure which summarizes the behaviour of the whole regional population, while allowing for comparison over space and time, because all differences in age structure have been eliminated. As far as natality is concerned, this leads us to the "gross reproduction rate", which may be interpreted as the expected number of descendants an individual would have if during each year of his life, he was exposed to the presently observed age-specific fertility rates (and if he would not die before reaching the end of his reproductive period). In an analogous way, one might compute the so-called "gross migra-production rate". In the case of mortality, one usually uses survival rates instead of death rates, and from these survival rates one obtains the expectation of life at birth, that is the number of years a new-born individual may expect to live if, during each year of his life, he is exposed to the mortality regime now observed for this age. Gross reproduction rates, expectations of life at birth, and gross migraproduction rates for each province and for each of the three census periods considered, are presented in Table 5.

Between 1966 and 1981, from each census period to the next one, the gross reproduction rate has declined in all provinces. For Canada as a whole, the rate dropped from 1.2 in 1966-1971 to 0.9 in 1976-1981, a 25 percent decline. As may be seen from the figures presented in Table 2, during the same period, the crude birth rate dropped only by 14 percent (from 17.8 to 15.3 per thousand). In other words, a more favourable age structure (more precisely, the arrival of the post-war baby boom generation at reproduction ages) has slowed down the decline of the birth rate. Once these cohorts have reached the end of their reproductive years (very soon), the birth rate will start to drop much faster.

While at the end of the 1960s all provinces had a gross reproduction rate which ensured that the population would reproduce itself (that is, a rate higher than 1.05; 1.05 instead of 1.00 because of mortality before reaching the end of reproductive years), ten years later, in 1976-1981, only two provinces (Newfoundland and Saskatchewan) were still in this situation. All provinces experienced a sharp decline in their fertility level, but the rate of decline varied considerably among them. On the whole, provinces which had the highest gross reproduction rate in 1966-1971 experienced the sharpest decline. Newfoundland is the most striking example in this respect: its rate dropped by 40 percent between 1966-1971 and 1976-1981, so that its over-fertility is now 20 percent instead of the previous 60 percent. It is mainly because of this province's behaviour that there seems to be a regional uniformization of fertility conditions. If one excludes Newfoundland, however, regional disparities do not seem to have been reduced: in 1966-1971, nine provinces had a

Table 5
Regional disparities in fertility, mortality and migration levels:
(1) 1966-1971, (2) 1971-1976, (3) 1976-1981

Province	Gross Reproduction Rate (1)	(2)	(3)	Expectation of Life at Birth (1)	(2)	(3)	Gross Migra-production Rate (1)	(2)	(3)
Newfoundland	1.9	1.4	1.1	72.2	72.9	75.0	1.0	1.8	1.0
Prince Edward Island	1.5	1.2	1.0	72.5	73.2	75.0	1.6	1.4	1.3
Nova Scotia	1.3	1.0	0.9	71.9	72.6	74.0	1.3	1.1	1.2
New Brunswick	1.4	1.1	0.9	72.2	72.8	74.0	1.3	1.0	1.1
Quebec	1.1	0.9	0.8	71.5	72.2	73.8	0.5	0.4	0.6
Ontario	1.2	1.0	0.9	72.7	73.5	75.0	0.5	0.6	0.6
Manitoba	1.3	1.1	1.0	73.3	73.7	75.0	1.7	1.6	1.6
Saskatchewan	1.5	1.2	1.1	73.8	74.3	75.4	2.1	1.6	1.3
Alberta	1.4	1.0	0.9	73.6	74.0	75.1	1.3	1.2	1.2
British Columbia	1.2	0.9	0.8	72.9	73.6	75.6	0.7	0.8	0.8
TOTAL	1.2	1.0	0.9	72.5	73.2	74.7	0.8	0.7	0.8

gross reproduction rate in the 1.1-1.5 range; in 1971-1976, the same nine provinces had a rate in the 0.9-1.2 range; and in 1976-1981, they were all in the 0.8-1.1 range.

Quebec is still the province with the lowest fertility, but it is now joined by British Columbia. The age profile (not shown here) is, however, quite different. Quebec's low fertility is almost exclusively due to the two younger age groups (15-19 and 20-24 years), its older age groups having an average fertility level. The reverse is true for British Columbia. From this, it may be concluded that there is still some room for a decline in fertility; if for each age group, each province adopted the lowest existing provincial fertility rate, then Canada's gross reproduction rate would be 0.7 instead of 0.9. (Note that some European countries are now at the 0.7 level).

The latest available data allow us to examine the most recent evolution of the gross reproduction rate. These data show that the decline in fertility is still continuing. While the Canadian gross reproduction rate obtained for the 1976-1981 period was 0.879, the same rate has been estimated by Statistics Canada to be 0.825 for the year 1982, and 0.816 for 1983. In Quebec, where (with British Columbia) the rate is the lowest, the rate is declining even faster: from 0.849 in 1976-1981 to 0.743 in 1982 and 0.708 in 1983. Note that even in Quebec, there seems still to be some room for further decline. If the whole of Quebec's population was to follow the fertility path shown by English-speaking Quebecers, then Quebec's fertility level would continue to drop significantly: the gross reproduction rate of the English-speaking group in Quebec is about 20 percent below the average (Termote and Gauvreau, 1985).

Compared to fertility, regional disparities in mortality are relatively small. In 1966-1971, the average Canadian new-born had a life expectancy of 72.5 years, with provincial figures varying between 71.5 years (Quebec) and 73.8 years (Saskatchewan). In 1976-1981, the Canadian figure was 74.7 years, a gain of more than two years in ten years, a remarkable increase indeed (note that most of this gain has been made between the last two census periods); the extreme values are now 73.8 years (Quebec) and 75.6 (British Columbia).

From these figures, one may thus conclude that regional mortality disparities, already relatively small in 1966-1971, are even less important in 1976-1981. When life expectancy is calculated separately for each sex (results are presented below, in Table 7), then it appears that regional disparities are higher for males than for females (with the 1976-1981 difference between minimum and maximum figures being 2.2 years in the first case, and 1.7 years in the latter case). Even if mortality differentials may thus look relatively small, their impact should not be underestimated. If, for instance, Quebec had experienced the same mortality regime as the one observed for the whole of Canada, there would have been, during the 1966-1976 period, 10 percent less deaths in this province than the number observed. And there would have been 10 percent more deaths in Saskatchewan if the Canadian mortality conditions had been valid for this province (Termote, 1985).

There is a clear east-west dichotomy in mortality conditions. In 1966-1971, all four Atlantic provinces plus Quebec had a below-average life expectancy and all five other provinces had an above-average life expectancy. The same was true for 1971-1976, but in 1976-1981, Newfoundland and Prince Edward Island had a slightly above-average expectation of life at birth. The three westernmost provinces had the highest life expectancies.

Regional disparities in the gross migra-production rate are, as expected, remarkably important. In 1966-1971, the rate varied between 0.5 and 2.1; in 1971-1976 between 0.4 and 1.6; and in 1976-1981 between 0.6 and 1.6. The ratio of 1 to 4 observed during the first two periods has thus been reduced to a ratio of 1 to less than 3 in the last period. From this, one may conclude that regional disparities in the level of out-migration are now significantly smaller. Considering the highly volatile character of migration behaviour, however, one should not see this reduction of regional disparities in migration as representing a long-term trend.

A comparison of the gross migra-production rates produced in Table 5 with the crude rates of out-migration presented in Table 2 shows that, by taking regional disparities in the age structure of the population into account, one does not obtain a different regional hierarchy. Actually, the conclusions obtained from crude rates are not affected when gross migra-production rates are considered. The same is also true when origin-destination flows are concerned. All that has been said before about the level and evolution of migration, about the provincial pattern of origin-destination flows, and about the reversals in this migration pattern is still valid when regional differentials in the age structure are taken into account. We will thus not repeat here the comments previously made when discussing crude migration rates.

After having briefly described the evolution of the provincial disparities in demographic behaviour, we now proceed to our second question: to what extent are these provincial populations "living together", demographically speaking?

Demographic Interaction Between Provinces

The basic question addressed by this book is made explicit through its title: are we "still living together"? For a demographer, such a question usually refers to cohabitation, marriage, or nuptiality. It is obviously not along these lines that we will discuss this question. There is no doubt the ten provinces of Canada are still "cohabitating". But the real question is not whether the populations of each of the ten provinces still share the same space, the same territory, but rather to what extent do these populations demographically interact – to what extent is there a demographic exchange between these provinces?

In the previous section, when considering regional disparities in migration behaviour, we began to answer the basic question. Let us therefore briefly repeat the main conclusions previously obtained: *First*, since fertility and mortality conditions are relatively homogeneous between provinces, and since natural growth is declining (being related to the aging of the population), interprovincial migration is – and increasingly will be – a dominant component of demographic growth. *Second*, there are wide provincial disparities in the total ("crude") rates of out- and in-migration. *Third*, over the last three census periods, provincial disparities in the level of out-migration have been markedly reduced, while the average (Canadian) propensity to migrate between provinces has remained relatively stable. And, *fourth*, over the 1966-1985 period there have been three important reversals in the provincial migration patterns. The first one (during the first half of the 1970s) was characterized by a strong improvement of the migration balance of the Atlantic and Prairie provinces; the second one (during the second half of the 1970s), by a marked westward shift of the population; and finally, over the last years, a pronounced – but probably short-lived – reversal dominated by the abrupt decline of the two westernmost provinces in favor of all others.

In order to look more precisely to the level of demographic interaction between provinces, let us go back to the figures of Table 3, where migration rates between each pair of origins and destinations are shown. Most of the figures of this table are very close to zero; more than half of these annual rates are below the 1.0 per thousand mark. Even if this criterion may appear arbitrary, let us neglect those origin-destination pairs for which the rate of migration does not reach at least the 1.0 per thousand level for at least one of the two last census periods. This may allow us to obtain a less confused picture of the migration interaction pattern. We then obtain the following matrix, where the X sign indicates an origin-destination pair for which, during at least one of the two last census periods, the rate of migration was 1.0 per thousand or above.

To: From:	NFLD	PEI	NS	NB	Q	O	M	S	A	BC
NFLD	–		X	X	X	X			X	X
PEI	X	–	X	X		X			X	X
NS			–	X	X	X			X	X
NB			X	–	X	X			X	X
Q					–	X			X	
O					X	–			X	X
M						X	–	X	X	X
S						X	X	–	X	X
A						X	X	X	–	X
BC						X		X	X	–

There clearly is only one block with a high level of interaction (both ways) within it and (almost) no interaction with provinces outside it. This block contains Ontario, the three Prairie provinces, and British Columbia. Then there is a second group, comprising the four Atlantic provinces. This group shows only limited interaction within it (half of the cells within this block are void), but a lot of one-way (that is western-oriented) dependence. In between, we have Quebec which is part of the migration space of the people from the Atlantic provinces, but not of those from the rest of Canada (except Ontario). Quebec looks like a "no man's land" between the four Atlantic provinces (which send much more people outside than they exchange between them) and the rest of the country (which has a lot of migration exchange within it, but not much – except on the receiving side – with the outside world).

The people of the ten Canadian provinces may be "still living together", but some are living more closely together than others. While the inhabitants of each of the four Atlantic provinces seem to consider the whole of Canada within their migration space (except Manitoba and Saskatchewan), people from Ontario and all four provinces west of it, clearly prefer to live among themselves. Quebec, with its very low level of out-migration, seems to be disconnected from the rest of the country, except for Ontario, the only province with which it has a two-way interaction (mainly thanks to the English-speaking population of Quebec). This is not the place to discuss the possible explanations for this particular way of "living together". It is obvious that, besides size and location (and language, as far as Quebec is concerned), economic variables also play an important role. For a discussion of some of these issues, see, for example, Ledent and Liaw (1985); Termote and Fréchette (1980); and Winer and Gauthier (1982).

By examining only the propensity of people of the different provinces to "visit" each other through migration, one loses some important dimensions of this demographic "living together". One should indeed not forget that migration does not only represent a loss of inhabitants for the region of out-migration, but also a loss in the number of years expected to be lived in the future within this region by the population of this region. A 20-year-old out-migrant should not be put on the same level as an 80-year-old out-migrant, because the loss in the expected numbers of years to be lived by these migrants is not the same. In other words, we have to look simultaneously to migration and mortality. Moreover, migration also represents a loss in the number of descendants expected to be born in the region of out-migration; part of this expected number of descendants actually will be born outside. To be able to measure this second indirect impact of migration, one has to consider simultaneously migration, fertility and mortality.

In order to take into account simultaneously all interdependencies between the three basic demographic phenomena (fertility, migration and mortality) and between all regions, we employ the multiregional demographic model developed by Rogers (Rogers, 1975; Rogers and Willekens, 1978)[2]. Let us first consider the relation between migration and mortality, as it is expressed in the multiregional life table.

We begin by analysing the probabilities of surviving (to some exact age) in the region of birth. That is, we summarize in one figure the propensities to out-migrate and survive. Table 6 gives these combined probabilities, for each of the 10 provinces, by sex. In this table we show the probabilities that an individual born in a particular province will still be there at exact ages 20, 35, and 65. These ages were chosen to represent the three most significant stages in a working lifetime: entry into the labor market, mid-term job mobility, and retirement. Thus, it is possible to see, for example, whether a boy born in a given province is likely to spend most of his working life in the province of his birth.

Table 6
Probabilities (percent) of surviving at exact ages 20, 35, and 65 in the province of birth: (1) 1966-1971, (2) 1971-1976, and (3) 1976-1981

Province of Birth		MALES At exact age			FEMALES At exact age		
		20	35	65	20	35	65
Newfoundland	(1)	74	46	27	75	49	33
	(2)	72	55	34	78	56	40
	(3)	72	45	28	73	49	35
Pr. Edward Island	(1)	61	29	15	63	31	19
	(2)	65	35	19	65	35	23
	(3)	67	37	21	68	37	25
Nova Scotia	(1)	67	40	22	66	40	26
	(2)	70	46	26	70	48	33
	(3)	69	42	24	70	45	31
New Brunswick	(1)	67	39	21	67	40	26
	(2)	72	49	29	73	50	35
	(3)	69	43	24	70	45	31
Quebec	(1)	85	73	46	86	75	56
	(2)	86	75	49	87	77	59
	(3)	85	72	45	86	74	55
Ontario	(1)	84	72	48	85	75	59
	(2)	81	67	45	82	69	54
	(3)	81	64	44	82	67	53
Manitoba	(1)	60	35	18	60	36	21
	(2)	62	38	20	63	40	25
	(3)	60	34	18	60	36	22
Saskatchewan	(1)	55	24	13	54	24	15
	(2)	62	36	20	61	34	22
	(3)	68	44	27	67	43	30
Alberta	(1)	69	50	28	70	51	33
	(2)	69	53	31	71	54	36
	(3)	71	55	33	71	55	37
British Columbia	(1)	80	64	44	81	66	53
	(2)	75	60	41	77	63	50
	(3)	79	62	44	78	63	51

The data presented in Table 6 show that, despite the important reversals in Canada's interprovincial migration flows, not much has changed as far as the capacity of each province to retain its natives is concerned. Some provinces (Saskatchewan, Manitoba, and Prince Edward Island)) will have lost from one-third to 40 percent of their potential labor force before this potential reaches working age. Things become even worse for these provinces when these cohorts go through the 20-35 age span; between one-third and one-half of those who remain until the age of 20 will leave before reaching 35. And finally, only about 20 to 30 percent of those born in these provinces will still be there at the age of 65. At the other extreme, Quebec, Ontario, and British Columbia are able to retain about 50 percent of their natives until age 65. The only case where the change in migration behaviour (as reflected through these combined probabilities) is indisputable, is Saskatchewan; between 1966-1971 and 1976-1981, this province has doubled its capacity to retain its natives until ages 35 and 65.

Spatial Life Expectancies

The next step is to consider the impact of migration on life expectancies, or more precisely, to disaggregate these expectancies by province of residence, while assuming that in-migrants are exposed to the probabilities of dying and out-migrating that exist in the region of in-migration. Table 7 shows the evolution, over the 1966-1981 period, of the life expectancies at birth with and without migration, and presents the percentage of total life expectancy spent in the province of birth. As expected, the range of life expectancies is narrower with migration than without. In 1976-1981 the difference between the extreme values was 1.4 for males and 1.0 for females for the former case, and respectively 2.2 and 1.7 for the latter. In both cases, this range was significantly narrower at the end of the period than at the beginning, at least for females. Thus it seems that while the marked increase in life expectancy experienced in Canada and in each of its provinces (particularly during the last period) has led to a decrease in regional mortality disparities, it also has led to increasing sex disparities.

On the whole, however, taking migration into account only slightly affects life expectancies, except for provinces with high life expectancy and heavy out-migration. (For instance, in Saskatchewan, male life expectancy, as observed in 1966-1976, drops by almost one year when migration is taken into consideration.) But for most provinces, gains in male life expectancy were

Table 7
Spatial Life Expectancies at Birth.
Percentage spent in province of birth: (1) 1966-1971, (2) 1971-1976, and (3) 1976-1981

	With migration (multiregional)			Percentage spent in province of birth			Without migration (uniregional)		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
a. Males									
Nfld	69.1	69.8	71.6	58	64	56	69.5	69.9	71.8
PEI	68.8	69.3	71.0	44	48	49	69.1	69.3	70.9
NS	68.9	69.5	71.1	52	56	52	68.6	68.9	70.3
NB	69.0	69.4	70.7	51	59	53	69.1	69.3	70.1
Que	68.7	69.0	70.4	79	81	77	68.4	68.6	69.9
Ont	69.5	70.1	71.6	79	74	71	69.3	70.0	71.4
Man	69.7	70.2	71.5	46	48	45	70.1	70.3	71.4
Sask	69.7	70.2	71.6	38	47	54	70.8	71.0	71.9
Alta	70.0	70.3	71.7	58	60	61	70.7	70.7	71.8
BC	69.7	69.9	71.8	73	69	70	69.7	70.0	72.1
Total	69.9	69.9	71.3	---	---	---	69.3	69.7	71.1
b. Females									
Nfld	75.7	76.8	78.8	57	64	56	75.3	76.5	78.6
PEI	76.2	77.1	78.9	42	48	47	76.5	77.7	79.6
NS	76.1	77.0	78.7	49	56	52	75.7	76.9	78.2
NB	75.9	77.0	78.6	49	59	52	75.8	76.9	78.4
Que	75.4	76.4	78.2	79	81	76	75.0	76.1	77.9
Ont	76.4	77.3	78.9	79	74	72	76.4	77.3	78.7
Man	76.6	77.4	79.0	44	48	44	76.8	77.5	78.9
Sask	76.6	77.6	79.1	36	47	51	77.5	78.3	79.6
Alta	76.8	77.7	79.1	57	60	58	77.2	78.0	79.1
BC	76.7	77.5	79.2	73	69	69	76.8	77.6	79.5
Total	77.3	77.3	78.9	---	---	---	76.1	77.1	78.6

much higher when migration was accounted for than when no migration was considered.

The total number of years that a newborn baby may expect to live in his or her province of birth varies considerably. A boy born in 1976-1981 in Manitoba may expect to live only 32 years in his province of birth, whereas a boy born in Quebec may expect to live 54 years in Quebec. For females the corresponding figures are 35 and 59 years. Actually, migration propensities observed in 1966-1981 imply that the average individual born in 7 of the 10 provinces will spend more than one-third of his or her life outside the province of birth.

The most (least) "absorbing" provinces remained the same all over the 1966-1981 period. Again, the reversals in migration flows did not significantly affect the hierarchy of the provinces in their capacity for retaining their natives. But the percentage of life expectancy to be spent in the province of birth may change significantly from one period to another (see, for example, the figures for Newfoundland, New Brunswick, and Saskatchewan).

The values for each province of residence by province of birth (not shown here) indicate that, based on the 1976-1981 data, a boy born in one of the four Atlantic provinces or in Manitoba may expect to spend at least 8 years in Ontario; a boy born in another Canadian province outside Ontario may expect to live no less than 5 years in the latter province. The corresponding values for females are 10 and 6 years. When 1966-1971 migration propensities are taken into account, the number of years a person born in the Atlantic provinces is likely to live in Ontario varies between 15 and 19. Life expectancy by region of residence thus captures the important decline in Ontario's attractiveness, and more generally the variation in the capacity of a region to retain its natives.

Another way to consider the impact of migration on the number of years lived in a region is to look not at the number of years "exported" to the other regions, but at the number of years "imported" from the rest of the country. Let us randomly choose 10 boys, one in each province, born in 1971-1976. Their life expectancy would be about 70 years. But when one adds to the number of years the boy born in Ontario may expect to live in his province of birth the number of years the boys born outside Ontario may expect to live in the latter province, then we obtain a total of 126 years, that is almost two complete life expectancies. At the other extreme, Prince Edward Island may expect to retain only for 33 years the boy born in this province, and the 9 boys born outside this province all together are expected to spend only about 3 years in Prince Edward Island, so that these 10 births will provide to the latter province only about the half of an "average" life expectancy.

Of course, in order to obtain for each province the balance of the "imported" and "exported" numbers of "expected years", one should take into account the various sizes of the birth cohorts. Results not presented here show that, by considering regional transfers of life expectancies instead of simply counting migrants, one actually obtains larger regional disequilibria. This is because regions of net in-migration usually receive younger migrants than regions of net out-migration. The socio-economic consequences of such important interprovincial transfers of life expectancies obviously are considerable.

Migration and Reproduction

Migrants not only transfer a number of expected years, they also transfer a number of expected descendants. Let us therefore now turn to the relation between migration and reproduction. The ages of highest mobility also are the ages of highest fertility. The question we now ask is: To what extent does migration affect the reproduction rate of each province? Table 8 presents for each of the three census periods considered the net reproduction rates for each province of birth (of the parents), and compares the rates obtained when migration is accounted for with traditional single-region rates.

As for life expectancies, migration reduces the range of net reproduction rates. In the case of Canada, this is true mainly because of Newfoundland, which, being a region of high fertility, experiences a significant drop in its rate when migration is taken into account; in 1976-1981, however, Newfoundland's fertility level had declined markedly, so that the impact of migration was much less important. For all other provinces, the difference between the multiregional and the single-region rates is marginal. But the capacity for a given region to reproduce itself with its own (native) population is significantly affected. Indeed, for some provinces, an important percentage of the expected births actually will take place outside the province of birth of the parents.

Once migration is taken into account, there is not a single Canadian provincial population that is able, according to the demographic behaviour observed between 1971 and 1981, to reproduce itself with only the fertility of its own native population. The most striking situations are, of course, to be found in the four Atlantic provinces and in Manitoba and Saskatchewan – that is, in provinces of (relatively) high fertility and high mobility. In Newfoundland and Saskatchewan the

1976-1981 rate without migration is 1.1; with migration, it drops to 1.0, but the "local" rate (i.e. the rate of reproduction of its natives within the region of birth) is only 0.6-0.7. Of course, when the 1966-1971 demographic behaviour is considered, the impact of migration is even higher, because this period was characterized by higher fertility levels (for instance, the corresponding figures for Newfoundland's rate are 1.8, 1.5, and 1.1; and for Saskatchewan, 1.4, 1.3, and 0.6).

Table 8
Net reproduction rates, with and without migration:
(1) 1966-1971, (2) 1971-1976, and (3) 1976-1981

	With migration (multiregional)			In province of birth of parents			Without migration (uniregional)		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Nfld	1.5	1.2	1.0	1.1	0.9	0.7	1.8	1.4	1.1
PEI	1.3	1.0	0.9	0.6	0.6	0.5	1.4	1.1	1.0
NS	1.2	1.0	0.9	0.7	0.6	0.5	1.3	1.0	0.8
NB	1.3	1.0	0.9	0.7	0.7	0.5	1.3	1.1	0.9
Que	1.1	0.8	0.8	0.9	0.7	0.7	1.1	0.8	0.8
Ont	1.2	0.9	0.8	1.0	0.7	0.6	1.2	0.9	0.8
Man	1.2	1.0	0.9	0.6	0.6	0.5	1.3	1.1	0.9
Sask	1.3	1.0	1.0	0.6	0.6	0.6	1.4	1.1	1.1
Alta	1.3	1.0	0.9	0.8	0.7	0.6	1.3	1.0	0.9
BC	1.2	0.9	0.8	0.9	0.7	0.6	1.1	0.9	0.8
Total	1.22	0.99	0.90	---	---	---	1.18	0.93	0.85

Besides Newfoundland, the decline in the "local" rate is particularly impressive in the case of Ontario and British Columbia, which combined a declining fertility with an increasing propensity to out-migrate. At the other extreme, in provinces like Prince Edward Island, Manitoba and Saskatchewan, the "local" rate dropped only slightly, because a declining propensity to out-migrate from these regions partly neutralized the decline in the fertility level.

The figures in Table 8 also show that, whereas Quebec, Ontario and British Columbia may count on retaining about 80 percent of the births expected from the cohorts born in these provinces in 1966-1981, some other provinces may count on keeping only about half of them. Of course, if there are "missing" births in some provinces, there also will be "imported" births in others. Data not shown here demonstrate that, just as in the case of life expectancy transfers, the regional pattern of fertility expectancy transfers does not necessarily correspond to the regional pattern of migration. For instance British Columbia may receive a fairly large share of the total gains from interprovincial migration (see Table 1), but because its in-migrants are much older than its out-migrants, its share in the total induced gains in terms of expected births, is much smaller. On the other hand, Quebec, which has rather old out-migrants but young in-migrants, may have had a relatively important share of the total losses from interprovincial migration, but it shows a relatively minor deficit in expected births.

What may we then conclude from this analysis of demographic interaction between provinces? As long as we consider only transfers of population, the picture is relatively clear. Canada then appears divided into two blocks: one comprising Ontario and all provinces west of it, a block which shows much "within" interaction, and receives a lot from outside without giving much; and a second block, containing the four Atlantic provinces, which does not show much "within" interaction, and receives almost nothing from outside, but gives much to the rest of the country. In between, we have Quebec, which appears almost totally disconnected from the rest of the country (except from Ontario).

Maybe we are "living together", but so far apart that we do not often visit each other. Moreover, as with most couples, one individual is dominating the other, so that it is always the latter who has to make the move. There also is a third person in the house, but it seems a bit insecure, so that it very rarely leaves its room.

The number of visits one may make to each other in a household is, however, not the only criterion for "living together". One also should consider the time spent in the partner's room and the importance of the presents one is giving each other. When one takes into account the duration of the visits, then it is clear that the most attractive member of the household is able to retain its visitor for a relatively long time (when he himself makes one of his rare visits to his partner, he usually does not stay long). The result is that the weaker finally leaves a great deal of his capacity of production – and reproduction – in the hands of his more attractive partner. Due to the multiplier effect of migration, we are actually living more together than we may believe, but some are living more closely together than others. But how will we "live together" in the future? The next section is devoted to a brief exercise in crystal-gazing.

Trends for the Future

Demographers are apparently very privileged; they basically have only three phenomena to analyze and forecast: fertility, migration, and mortality. Yet their forecasting performance has not been very successful. They did not forecast the rapid and continuous drop in fertility over the past 20 years, they did not forecast the considerable reversals in interprovincial migration over the same past 20 years, and they did not forecast the marked increased in life expectancy during the second half of the 1970s.

We do need to have at least some idea of what could happen in the future. Maybe we are not able today to forecast how many people will migrate to Alberta in the year 2000, but at least we may project how many people will reside in each province on the basis of a given set of "reasonable" assumptions concerning the demographic behaviour of each provincial population. Compared to 20 years ago, we have today better data, better techniques for analyzing them, better projection techniques, and a better understanding of demographic behaviour. All this leads us to believe that it is today probably easier to arrive at a set of "reasonable" assumptions.

Such an exercise in population projection has recently been made by Statistics Canada. The main advantage of these projections is that the latest available data (those related to 1983) were taken into account. In this last section, we will briefly discuss some of the projection results obtained by Statistics Canada (1985).

Eighteen scenarios have been considered by Statistics Canada, and among them, five have been chosen as being the most plausible. In Table 9, we present, for each province or territory, and for each of the five forthcoming census years, the minimum (m) and maximum (M) projected population figures obtained from these five scenarios. These extreme values thus represent the width of the most probable path of demographic growth for each province. It will provide us with a measure of sensitivity of the projections with respect to a given set of assumptions. Among those five scenarios, Statistics Canada's scenario 3 may be considered the most probable (P). As a basis for comparison, and in order to examine the implications of the present demographic behaviour for the future evolution of the population, we also present the results of a scenario (C), based upon holding constant the 1976-1981 fertility, mortality and

Table 9
Observed and projected population figures, 1981-2006
(thousands)

		1981	1986	1991	1996	2001	2006
Nfld	- C	568	584	596	605	609	609
	- m	568	592	608	611	609	602
	- M	568	602	646	691	731	766
	- P	568	595	614	626	633	635
PEI	- C	123	128	132	136	139	141
	- m	123	126	127	127	126	125
	- M	123	127	134	142	150	156
	- P	123	127	128	129	130	130
NS	- C	847	865	880	889	893	892
	- m	847	873	889	890	887	881
	- M	847	884	918	950	979	1,011
	- P	847	878	895	904	910	911
NB	- C	696	715	730	741	746	747
	- m	696	720	734	734	730	720
	- M	696	727	764	800	831	857
	- P	696	724	739	746	750	749
Que	- C	6,438	6,501	6,556	6,547	6,477	6,369
	- m	6,438	6,627	6,753	6,780	6,741	6,658
	- M	6,438	6,634	6,857	7,117	7,348	7,528
	- P	6,438	6,634	6,786	6,862	6,876	6,844
Ont	- C	8,625	8,749	8,899	8,984	8,997	8,953
	- m	8,625	9,067	9,422	9,626	9,738	9,773
	- M	8,625	9,170	9,736	10,253	10,832	11,370
	- P	8,625	9,110	9,471	9,750	9,945	10,058
Man	- C	1,026	1,011	1,001	986	968	948
	- m	1,026	1,072	1,095	1,099	1,097	1,092
	- M	1,026	1,080	1,138	1,202	1,272	1,236
	- P	1,026	1,074	1,104	1,121	1,134	1,142
Sask	- C	968	1,008	1,050	1,086	1,116	1,144
	- m	968	1,027	1,065	1,095	1,120	1,143
	- M	968	1,036	1,111	1,184	1,252	1,318
	- P	968	1,029	1,077	1,124	1,171	1,214
Alta	- C	2,238	2,548	2,869	3,155	3,405	3,628
	- m	2,238	2,337	2,374	2,447	2,514	2,567
	- M	2,238	2,505	2,757	3,015	3,259	3,483
	- P	2,238	2,408	2,659	2,915	3,139	3,335

Table 9 (Cont'd)

		1981	1986	1991	1996	2001	2006
BC	- C	2,744	2,940	3,156	3,353	3,527	3,682
	- m	2,744	2,935	3,091	3,191	3,254	3,295
	- M	2,744	2,957	3,232	3,516	3,761	3,985
	- P	2,744	2,957	3,232	3,516	3,761	3,985
Yukon	- C	23	21	22	22	23	24
	- m	23	21	21	22	23	24
	- M	23	22	22	25	28	30
	- P	23	21	22	24	25	26
NWT	- C	46	51	52	53	54	55
	- m	46	51	52	53	53	54
	- M	46	52	58	63	67	70
	- P	46	51	53	55	56	58
Can	- C	24,343	25,120	25,944	26,558	26,954	27,192
	- m	24,343	25,583	26,612	27,348	27,816	28,090
	- M	24,343	25,625	27,057	28,695	30,260	31,639
	- P	24,343	25,607	26,781	27,772	28,529	29,088

Note:
- C refers to the scenario based upon holding constant the 1976-1981 fertility, mortality and interprovincial migration rates, and assuming zero net international migration.
- m and M refer to the minimum and maximum figures obtained from the five most probable scenarios chosen by Statistics Canada (1985). Because the same scenario will not necessarily produce minimum (maximum) figures for each year of the projection period, the set of minimum (maximum) figures for a given province may come from more than one scenario.
- P refers to the scenario which on the whole may be considered as the most probable. We have chosen Statistics Canada's scenario 3: a fertility level which remains close to the present level during the whole projection period, a relatively small gain from international migration (an annual gain of 50,000 for Canada as a whole), and a gradual return of interprovincial migration towards westward flows.

Sources: Statistics Canada (1982) for 1981 census figures. Statistics Canada (1985) for scenarios m, M, and P. Author's computations for scenario C (Termote, 1984a).

interprovincial migration rates, and assuming zero net international migration.

Before discussing the figures of Table 9, a brief summary of Statistics Canada's five "most probable" scenarios seems in order. The first scenario assumes a continuing, but relatively small decline in the fertility rate, a relatively low level of net international migration and the continuation of the most recent trends in interprovincial migration (characterized by a sharp decline of Alberta and British Columbia). Scenario 2 differs from scenario 1 only with respect to interprovincial migration, which is supposed to show a gradual return to the westward flow. Scenario 3 differs from scenario 2 only with respect to the fertility assumption: fertility is supposed to stabilize at the current level. Scenario 4 also assumes stabilization of fertility at current levels, but net international migration is supposed to double and the recent decline of Alberta and Saskatchewan to continue. Finally, scenario 5 assumes the same high net international migration as scenario 4, but with a relatively rapid increase in fertility (up to replacement level in 1996); interprovincial migration rates observed over the last two years (1981-1983) are held constant.

The figures presented in Table 9 demonstrate how sensitive the results may be with respect to a given set of assumptions, and, in addition, how difficult demographic forecasting may be. For the first projection year considered here, namely 1986, all five scenarios produce results which, on the whole, are very close. This of course is not so surprising, considering that the projection period extends only over three years. The only case where the difference between maximum and minimum figures is important is Alberta (a 7 percent difference); this obviously is related to the basic interprovincial migration assumption (continuation of most recent decline of the "West", or gradual return to a westward movement of the population). But when the projection extends beyond the decade, then the choice of a particular scenario has a marked impact on the projected population figures.

The 1996 figures show important differences between extreme values. Again, it is for Alberta that the choice of the scenario has the largest impact, with a difference of almost 20 percent. The four less populated regions (the two islands and the two territories) also show high sensitivity, while the two most populated provinces are the least affected by the choice of the scenario (a 5 to 6 percent difference between extreme values).

Once we look into the years 2000, then of course the impact of the choice of a particular scenario becomes even more important. One may consider, however, that, for seven of the ten provinces, the difference between extreme values remains acceptable (between 12 percent for Quebec and 17 percent for British Columbia, this over a 23 year period). It is only for the two less populated provinces, for the two territories and, above all, for Alberta (for which the difference reaches 26 percent), that the choice of a given scenario really is crucial.

Looking now to the "most probable" scenario, one may observe that for most provinces this scenario leads to projected population figures only slightly above the ones obtained by taking the minimum values. This of course is related to the fertility assumptions: it is considered that a stabilization of fertility around the present level is more probable than a rapid increase towards replacement level or than a slow continuing decline. For two provinces, however, the most probable scenario produces figures which are either equal (British Columbia) or very close (Alberta) to the maximum values. This obviously is related to the fact that the "most probable" scenario assumes a gradual return towards a westward movement of the population.

Finally, let us briefly consider the "constant behaviour and zero net international migration" scenario. It may be interesting to note that the differences between the results obtained with this scenario and those derived from the "most probable" scenario are, in most cases, relatively small. For projection year 1996, the difference exceeds 5 percent for only three provinces, and for the year 2006, it exceeds 10 percent in only two cases.

Projecting the share of each province and territory in the total population of Canada is much easier than projecting population growth. Shares are affected almost solely by net migration (because fertility and mortality evolve usually in a relatively homogeneous way over regions). This obviously is not true when population growth is projected; in this case, fertility (and mortality) assumptions are of course important as well. In Table 10, we present, for each census year from 1901 to 1981, and for each census year until 2006, the observed and projected distribution of the Canadian population. In order to see how sensitive these projected shares may be with respect to the scenario adopted, we present the extreme values of these projected shares (that is, the minimum and maximum values obtained from the five "most plausible" scenarios of Statistics Canada; because, for a given region, these values may originate from different scenarios, the sum over all regions does not necessarily equal 100 percent).

It is well known that between 1901 and 1941 (because of Newfoundland's entrance into the Confederation, the period may not be extended until 1951), there has been a considerable westward shift of the population (related to the settlement of the

Table 10
Observed and projected percentage distribution of population, 1901-2006

Province or Territory	1901	1911	1921	1931	1941	1951	1956	1961	1966	1971	1976	1981	1986	1991	1996	2001	2006
Newfoundland	-	-	-	-	-	2.6	2.6	2.5	2.5	2.4	2.4	2.3	2.3 2.3	2.3 2.4	2.2 2.5	2.2 2.5	2.1 2.6
Prince Edward Island	1.9	1.3	1.0	0.8	0.8	0.7	0.6	0.6	0.5	0.5	0.5	0.5	0.5 0.5	0.5 0.5	0.5 0.5	0.5 0.5	0.4 0.5
Nova Scotia	8.6	6.8	6.0	4.9	5.0	4.6	4.3	4.0	3.8	3.7	3.6	3.5	3.4 3.5	3.3 3.4	3.3 3.4	3.2 3.4	3.1 3.4
New Brunswick	6.2	4.9	4.4	3.9	4.0	3.7	3.4	3.3	3.1	2.9	2.9	2.9	2.8 2.8	2.8 2.8	2.7 2.9	2.6 2.9	2.6 2.9
Quebec	30.7	27.8	26.9	27.7	29.0	29.0	28.8	28.8	28.9	27.9	27.1	26.4	25.9 25.9	25.3 25.5	24.7 25.2	24.1 24.8	23.5 24.5
Ontario	40.6	35.1	33.4	33.1	32.9	32.8	33.6	34.2	34.8	35.7	36.0	35.4	35.4 35.8	35.4 36.2	35.1 36.4	34.9 36.6	34.6 36.8
Manitoba	4.7	6.4	6.9	6.8	6.3	5.5	5.3	5.1	4.8	4.6	4.6	4.2	4.2 4.2	4.1 4.2	4.0 4.2	3.9 4.2	3.9 4.2
Saskatchewan	1.7	6.8	8.6	8.9	7.8	5.9	5.5	5.1	4.8	4.3	4.0	4.0	4.0 4.0	4.0 4.1	4.0 4.2	4.0 4.3	4.1 4.4
Alberta	1.4	5.2	6.7	7.1	6.9	6.7	7.0	7.3	7.3	7.6	8.0	9.2	9.1 9.8	8.9 10.2	8.9 10.5	9.0 11.0	9.2 11.5
British Columbia	3.3	5.5	6.0	6.7	7.1	8.3	8.7	8.9	9.3	10.1	10.7	11.3	11.5 11.5	11.6 12.1	11.7 12.7	11.7 13.2	11.7 13.7
Yukon & Northwest Territories	0.9	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3 0.3	0.3 0.3	0.3 0.3	0.3 0.3	0.3 0.3
CANADA	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-	-	-	-	-

Source: Statistics Canada (1973a, 1973b, 1982, 1985).

Prairies). Over this forty year period, the share of the three Prairie provinces and British Columbia increased from 11 percent to 28 percent. Similarly, the share of the six other provinces dropped markedly (from 88 percent to 72 percent); only Quebec resisted this westward shift. Between 1951 and 1981, the shift was, however, much slower, with also much less spatial homogeneity.

While between 1901 and 1941, each of the four westernmost provinces had markedly increased its share, and each of the other provinces had had a declining share, there is much more diversity in the 1951-1981 evolution. Within the block of the four westernmost provinces, now only Alberta and British Columbia experienced a continuous increase in their share (from a total of 15.0 percent to 20.5 percent), while Manitoba and Saskatchewan had a significant and steady decrease (from 11.4 to 8.2 percent). The Atlantic provinces too have seen their share continuously decreasing (from 11.6 percent to 9.2 percent), with Quebec, which had remarkably resisted during the first half of the century, now joining them (with a drop from 29.0 to 26.4 percent). Ontario, which had seen its share rapidly shrinking between 1901 and 1941 (from 41 to 33 percent), now was experiencing a significant increase (from 32.8 to 35.4 percent).

Despite the marked disparities in fertility and mortality, and despite the important reversals in the interprovincial migration pattern, the westward shift of the Canadian population has thus been relatively slow during the last 30 years (1951-1981), and highly localized (in favour of the two westernmost provinces). What kind of population distribution may we then expect for the next 25 years? Most probably there will not be much difference between the distribution observed in 1981 and the one that the year 2006 will offer. Only for Quebec and the two westernmost provinces is there a clear and significant change to be expected.

Whatever the scenario that may be chosen, Quebec's share will be reduced, the importance of its decline in demographic weight being comparable to the one observed between 1951 and 1981; the extreme values are 23.5 and 24.5 percent in 2006, down from 26.4 in 1981 and 29.0 percent in 1951. And whatever the scenario that is chosen, Alberta and British Columbia may expect an increasing share, with a relatively wide range of expected values, however: between 20.9 and 25.2 percent, up from 20.5 percent in 1981 and 15.0 percent in 1951.

The demographic weight of the other parts of the country will probably not change very much. In the case of the Atlantic provinces, their total 2006 expected share lies in the 8.2-9.4

range, compared to 9.2 in 1981. It is thus only under the most favourable circumstances that these provinces may expect to keep their share; otherwise, they might experience a slight decline. The reverse is true for Manitoba and Saskatchewan, which may expect a (very small) decline of their share only under the worst circumstances; otherwise, they may expect a (very small) increase. Ontario's expected range is 34.6-36.8, compared to the 35.4 figure observed in 1981; the share of this province will thus most probably not change much over the next decades.

The regional disparities in population growth, and the (slowly) changing regional distribution of this population, imply of course regional disparities in the growth rate of this population. Table 11 presents for each province the annual growth rate which was observed in 1966 and 1981, and the one that may be expected in 1996 and 2006 if the most plausible scenario becomes true (that is, Statistics Canada scenario 3). For the sake of clarity and briefness, we have to neglect the other scenarios. These, however, would in most cases have led to expected rates that are very close to the ones produced in Table 11. This may be seen from the figures in Table 9.

Canada's annual growth rate dropped by 33 percent (from 1.8 to 1.2 percent) over the 15 years between 1966 and 1981. During the next 15 years (1981-1996), this rate is expected to drop by 50 percent, down to 0.6 percent. There are, however, wide regional disparities around these national figures. In 1981, only two provinces, namely Alberta and British Columbia, showed an above-average growth rate. These two provinces already had an above-average rate in 1966, but Ontario was then still a member of the group. By 1996, it is expected that the two westernmost provinces still will show the highest growth rates (with a marked decline for Alberta, however), but Saskatchewan probably will be a member of this above-average group.

In 1966, two provinces were experiencing zero (or quasi-zero) population growth – Manitoba and Saskatchewan. In 1981, there still were only two provinces in this case, but they were not the same; they were then located in the East (Newfoundland and Prince Edward Island). By 1996, however, there are six provinces which may expect to be almost at zero population growth: all four Atlantic provinces, plus Quebec and Manitoba. And by the year 2006, only the three westernmost provinces may expect to still have an annual growth rate that is significantly above zero. All other provinces probably will experience zero population growth. Some of them (New Brunswick and Quebec) may even see their population declining (Quebec's decline most probably will have started before the year 2000).

Table 11
Observed and projected annual growth rate and age structure, 1966-2006

	Annual Growth Rate (%)				Percent aged 0-19				Percent aged 65 +			
	1966	1981	1996	2006	1966	1981	1996	2006	1966	1981	1996	2006
Newfoundland	1.1	0.1	0.3	0.0	51	41	31	28	6	8	11	12
Prince Edward Island	0.5	0.2	0.2	0.0	45	35	28	25	11	12	14	15
Nova Scotia	0.5	0.5	0.2	0.0	43	34	26	24	9	11	14	15
New Brunswick	0.5	0.4	0.2	-0.1	47	35	27	24	8	10	13	14
Quebec	1.4	0.6	0.1	-0.1	43	31	26	23	6	9	13	14
Ontario	2.4	1.1	0.5	0.2	40	31	26	23	8	10	14	16
Manitoba	-0.0	0.8	0.3	0.1	41	33	28	25	8	12	14	15
Saskatchewan	0.2	1.1	0.9	0.7	43	34	30	28	9	12	14	13
Alberta	1.8	3.6	1.6	1.1	44	34	29	27	7	7	9	10
British Columbia	3.8	1.7	1.5	1.1	39	30	26	24	10	11	13	14
CANADA	1.8	1.2	0.6	0.3	42	32	26	24	8	10	13	14

Such striking disparities in the expected demographic growth rate, particularly in a context in which the country as a whole is itself moving very fast towards zero population growth, will of course have important socio-economic implications. In this paper, which already is too long, we are able to discuss only a few demographic implications, namely those related to the age structure of the population. Table 11 presents, besides the just discussed annual growth rates, the observed and projected shares of the population in the 0-19 and 65 and over age groups.

The wide regional disparities in the level and in the rate of decline of fertility, and also the age selectivity of migration, led to important regional differences in the rate of aging during the 1966-1981 period. One way to estimate the rate of aging of a population is to divide the ratio of the 65 and over share to the 0-19 share, as obtained at the end of the period, by the same ratio calculated at the beginning of the period. The rate of aging so computed will be the highest for those regions where the share of the 65 and over population is increasing the most rapidly and the share of the 0-19 population decreasing the most rapidly. Computations have been made for the 1966-1981 period, and for the 1981-1996 period; the latter period has been chosen so as to have two periods of equal length, in order to facilitate comparisons. Results are shown in Table 12, with the provinces being ranked in decreasing order of their rate of aging.

It is clear that there have been wide regional disparities in the rate of aging during the 1966-1981 period. The populations of Newfoundland and Quebec have been aging particularly fast; these provinces also had the "youngest" age structure at the beginning of the period, and it is mainly because of their marked fertility drop that they were aging at such a rapid rate. Manitoba, Saskatchewan and New Brunswick also had an above-average rate of aging. At the other extreme, Alberta and British Columbia experienced the lowest rate; this is mainly due to the age selectivity of migration, and to the induced effect of migration on natural increase.

The most probable scenario for the 1981-1996 period implies that the population of Newfoundland, Quebec and New Brunswick still will be aging faster than most other provincial populations, while Alberta and British Columbia are expected to keep their below-average rate of aging. The latter two provinces are however expected to be joined by Manitoba and Saskatchewan; this of course may be related to the improvement in these provinces' migration balance.

Such wide regional disparities in the observed and expected rate of aging undoubtedly will have serious socio-economic implications. One implication which deserves particular attention relates to social transfers: family allowances transfers and retirement transfers will, for instance, be markedly affected (Termote, 1984b).

Table 12
Observed (1966-1981) and projected (1981-1996) provincial rates of aging

1966-1981		1981-1996	
Newfoundland	2.2	Newfoundland	1.8
Quebec	2.1	Quebec	1.7
Manitoba	1.9	New Brunswick	1.7
New Brunswick	1.7	Ontario	1.7
Saskatchewan	1.7	Nova Scotia	1.7
Ontario	1.6	Prince Edward Island	1.5
Nova Scotia	1.5	Alberta	1.5
Prince Edward Island	1.4	Manitoba	1.4
British Columbia	1.4	British Columbia	1.4
Alberta	1.3	Saskatchewan	1.3
Canada	1.6	Canada	1.6

Note: The rate of aging over a given period is calculated by dividing the ratio of the 65 and over share to the 0-19 share, as obtained at the end of the period, by the same ratio observed at the beginning of the period.

Source: Table 11.

Conclusion

We have seen that, demographically speaking, the populations of the Canadian provinces are indeed "still living together", but in a particular way. Despite some important reversals in the migration balance of many provinces, the basic pattern of migration interaction has not changed very much over the last decades. This pattern is characterized by strong interaction between each of the five westernmost provinces (Ontario, the Prairies and British Columbia). These provinces receive a considerable number of migrants from the Atlantic provinces, but do not give them much in return, demographically speaking. Between these two blocks, Quebec appears to be disconnected from the rest of the country, showing some interaction only with Ontario, thanks mainly to the English-speaking population. When, beyond this direct migration interaction, one also takes into account the induced effects of migration, in terms of life expectancy and fertility transfers, then those spatial disequilibria in the interaction pattern are considerably amplified.

The basic spatial pattern of this "living together" probably will not change very much over the next two decades. But the intensity of demographic interaction most probably will decline. An older population usually shows less demographic interaction than a young population. At the end of the century, the mean age of Canada's population is expected to be about 38 years, instead of 30 years as in 1966. And the share of the population older than 35 years (that is, beyond the ages of high mobility and fertility) will have increased from 38 percent to 53 percent. One may then assume that if the partners still live together, they will not be living very intensively together, at least in demographic terms.

Of course, these projections should be taken cautiously. In this respect, one should remember the words of Isaiah, who, as a prophet, may be considered a specialist in this matter:

> "And thus spoke the Eternal:
> Forget the past
> Because I will do something new."
> (Isaiah, Psalm 43, verse 18).

Notes

1. Having been obtained as residuals, figures for net international migration are disputable. They will not be discussed in detail.

2. This model assumes that migrants adopt (on the average after two and a half years, if we suppose uniform distribution of the migration flow over the census period) the demographic behaviour of their region of in-migration.

References

Ledent, Jacques and Kao-Lee Liaw, 1985. "Interprovincial migration outflows in Canada, 1961-1983: Characterization and Explanation". Paper presented at the Seminar on Internal Migration and Regional Development, Montreal, April, 1985.

Rogers, Andrei, 1975, *Introduction to Multiregional Mathematical Demography*, New York: Wiley and Sons.

Statistics Canada (1973a). *Revised Annual Estimates of Population*, Catalogue 91-512. Ottawa.

_______________ 1973b. *1971 Census*, Catalogue 92-715, Ottawa.

_______________ 1978. *1976 Census*, Catalogue 92-823, Ottawa.

_______________ 1982. *1981 Census*, Catalogue 92-901, Ottawa.

_______________ 1984. *Postcensal Annual Estimates of Population by Marital Status, Age, Sex and Components of Growth for Canada and the Provinces, June 1, 1982 and 1983*. Catalogue 91-210, Annual, Volume 1, First issue, November 1984, Ottawa.

_______________ 1985. *Population Projections for Canada, Provinces and Territories. 1984-2006*, Catalogue 91-520, Occasional. Ottawa.

Termote, Marc, 1984a. "Using Multiregional Methods to Analyse Changes in Demographic Behavior Over Time: The Canadian Experience". Paper presented at the 31st North American meetings of the Regional Science Association, Denver, Colorado, November, 1984.

_______________ 1984b. "Regional Differentials in the Aging of Population. Some Implications for Regional Development". Paper presented at the Second International Congress of Arts and Science, Rotterdam, The Netherlands, June, 1984.

_______________ 1985. "Regional Mortality Differentials". In Andrei Rogers and Frans Willekens (eds.), *Migration and*

Settlement: A Multiregional Comparative Study, Reidel Publishing Company, Dordrecht, Holland.

Termote, Marc and Raymonde Fréchette, 1980. "Le renversement récent des courants migratoires entre les provinces canadiennes: Essai d'interprétation", *Revue canadienne des sciences régionales*, 3, 2: 163-192.

Termote, Marc and Danielle Gauvreau, 1985. "Le comportement démographique des groupes linguistiques au Québec pendant la période 1976-1981: Une analyse multirégionale". *Cahiers québécois de démographie*, 14, 1.

Willekens, Frans and Andrei Rogers, 1978. *Spatial Population Analysis: Methods and Computer Programs*. Laxenburg, Austria: International Institute for Applied Systems Analysis.

Winer, Stanley and Denis Gauthier, 1982. *Internal Migration and Fiscal Structure: An Econometric Study of the Determinants of Interprovincial Migration in Canada*, Ottawa: Economic Council of Canada.

Chapter 3:

Structural Changes in the Canadian Space-Economy, 1971-1981

William J. Coffey

Introduction

During the decade of the 1970s a number of significant changes occurred in the Canadian economy: a rapid increase in the rate of economic growth, albeit more pronounced at the beginning of the decade than at the end; the five-fold expansion in the value of output from the energy sector; a decline in the rate of growth of the manufacturing sector and, in some cases, an absolute decline in specific portions of the sector; and a corresponding increase in the growth of service industries. In many ways these changes may be viewed as reactions to external forces: oil crises; increased foreign competition; shifting patterns of external demand; and U.S. control over the economy. Such changes have induced major alterations in the spatial structure of the Canadian economy.

The purpose of this paper is to present an overview of the structural and spatial shifts that have occurred in the Canadian economy over the period 1971-1981. Due to data limitations, however, the focus of the study is restricted to 122 urbanized areas, constituting 71.2 percent of the Canadian population in 1981 (Appendix A). Although an incomplete view of the Canadian space-economy is presented, the spatially disaggregated data contained here can contribute to a better understanding of both structural and spatial shifts in Canada by complementing studies carried out at the more aggregate level (e.g., Economic Council of Canada, 1984).

Although many important conceptual issues and policy questions are closely related to the processes that will be examined, the principal focus of the paper is empirical: the identification of general trends in the context of a massive and complex data set. In addition, while general consideration is given to all sectors of the economy, specific attention will be directed to the service industries, in view of recent recognition of their role in advanced economies (e.g., Stanback, 1979; Stanback *et al.*, 1981; Noyelle and Stanback, 1974; Gershuny and Miles, 1983; Economic Council of Canada, 1984).

The data utilized in this analysis consist of Statistics Canada employment data, recorded by place of residence. Due to boundary changes in certain census metropolitan areas (CMAs) and in other cities and urban places between 1971 and 1981, comparison of absolute levels of employment may be misleading; therefore, relative changes will be utilized.

The following two sections examine changes in the structural and occupational structure of the 122 urbanized areas that compose the data set (referred to hereafter simply as the "urban system"). Within each of these sections, observations will be made at a number of spatial scales. These two sections are followed by a discussion which summarizes results and draws a set of conclusions.

Evolution of Sectoral Structure

In this section, changes in the sectoral composition of the Canadian urban system will be described. The analysis proceeds at four spatial scales: (1) the urban system as a whole; (2) the urban component of five regions; (3) five size categories of urban places; and, finally, (4) individual urban areas. Sixteen sectoral categories are used in the analysis. These categories have been selected in order to elicit maximum information concerning the important groups in Canada's economic structure:

1. Primary Industries (PRI): agriculture, mining, forestry, fishing & trapping
2. Manufacturing 1 (MFG1): traditional industries: food, clothing, furniture
3. Manufacturing 2 (MFG2): intermediate industries: metals, machinery, chemicals, minerals
4. Manufacturing 3 (MFG3): technical industries: transportation, electrical, pharmaceuticals, scientific
5. Construction (CONSTR)
6. Transportation & Storage (TRANS)
7. Communication (COMMUN)
8. Utilities (UTIL)
9. Wholesaling (WHOLE)
10. Retailing (RETAIL)
11. Finance, Insurance, & Real Estate (FIRE)
12. Non-Profit Services (NONPROF): education, health & welfare, religion

13. Mainly Consumer Services (CONSER): amusement & recreation; personal services; accommodation & food
14. Producer Services (PRODSER): accounting, advertising, consulting, management, and so forth
15. Public Administration & Defence (PUBLIC)
16. Unclassified (UNCLASS)

It should be noted that the latter category declined considerably in size over the period 1971-1981 due to improved precision of the responses to census questions. Thus no real significance should be attached to its decline. Further, it must be recognized that certain increases in the other sectoral categories may be due to this improved precision.

The Urban System

Table 1 summarizes global changes in the structural composition of the economic base of the urban system over the period 1971-1981. In terms of expansion of the sectors (column 6), the manufacturing industries experienced the weakest levels of growth, followed by transportation, public administration, construction and primary industries. Producer services underwent the largest expansion, followed by consumer services and FIRE. These changes are reflected in the changing levels of employment shares by sector (column 5): consumer and producer services show the greatest positive changes, followed by FIRE. Manufacturing experienced a declining share, followed by transportation, public administration, construction, and the primary industries. On the basis of these two measures, a subjective distinction may be drawn between three classes of sectors: those that have assumed increasing importance over the period (producer and consumer services, FIRE, wholesaling, retailing, and non-profit services); those that have declined over the period (manufacturing); and the residual intermediate set that has not undergone significant change.

Regional Change

Table 2 presents similar information, disaggregated for the urban system components of five regions. It may be seen that, overall, employment increased more slowly over the period 1971-1981 in the Atlantic region, Quebec, and Ontario than in the Prairies and British Columbia. In a general way, the patterns observed for the urban system as a whole are reproduced at the regional level; there are some notable exceptions, however.

Table 3 facilitates the identification of global trends. The primary sector grew more slowly than total employment, and experienced a declining share of employment, in all regions

Table 1
Sectoral Shares, Canadian Urban System 1971-1981

	Sector	*1971* Employment (1)	% (2)	*1981* Employment (3)	% (4)	Share Change 1971-81 (5)	Employment Growth (%) (6)
1.	Primary	168,160	2.80	227,895	2.76	−0.04	35.5
2.	Manufact.1	608,375	10.13	739,435	8.95	−1.18	21.5
3.	Manufact.2	418,515	6.97	536,465	6.49	−0.48	28.2
4.	Manufact.3	253,430	4.22	307,900	3.73	−0.49	21.5
5.	Construction	349,245	5.82	472,945	5.72	−0.10	35.4
6.	Transport	300,300	5.00	391,200	4.73	−0.27	30.3
7.	Communic.	128,890	2.15	198,085	2.40	+0.25	53.7
8.	Utilities	62,775	1.05	90,760	1.10	+0.05	44.6
9.	Wholesale	272,565	4.54	421,300	5.10	+0.56	54.6
10.	Retail	674,055	11.22	993,155	12.02	+0.80	47.3
11.	FIRE	302,925	5.04	510,095	6.17	+1.13	68.4
12.	Non-Profit	857,095	14.27	1,234,010	14.94	+0.67	44.0
13.	Consumer Ser	494,940	8.24	838,630	10.15	+1.91	69.4
14.	Producer Ser	177,935	2.96	400,895	4.85	+1.89	125.3
15.	Public Admin	490,675	8.17	657,175	7.95	−0.22	33.9
16.	Unclassified	455,510	7.42	242,095	2.94	−4.48	−46.9
	Urban System	6,005,356	100.00	8,262,030	100.00		37.6

Table 2
Sectoral Shares, Canadian Urban System by Region1971-1981

Sector	*1971* Employment (1)	% (2)	*1981* Employment (3)	% (4)	Share Change 1971-81 (5)	Employment Growth (%) (6)
			Atlantic Provinces			
PRI	15,745	4.27	19,660	4.16	−.11	24.9
MFG1	25,440	6.89	31,420	6.65	−.24	23.5
MFG2	10,980	2.97	11,440	2.42	−.55	4.2
MFG3	6,740	1.83	8,525	1.81	−.02	26.5
CONSTR	22,715	6.15	24,700	5.23	−.92	8.7
TRANS	23,530	6.37	25,705	5.44	−.93	9.2
COMMUN	9,505	2.58	13,120	2.78	.20	38.0
UTIL	3,940	1.07	5,730	1.21	.14	45.4
WHOLE	17,965	4.87	23,710	5.02	.15	32.0
RETAIL	45,830	12.42	62,450	13.23	.81	36.3
FIRE	13,465	3.65	24,115	5.11	1.46	79.1
NONPROF	58,855	15.94	85,065	18.02	2.08	44.5
CONSER	29,745	8.06	46,365	9.82	1.76	55.9
PRODSER	7,440	2.02	15,020	3.18	1.16	101.9
PUBLIC	51,025	13.82	61,710	13.07	−.75	20.9
UNCLASS	26,190	7.10	13,500	2.86	−4.24	−48.5
ATLANTIC	369,120	100.00	472,185	100.00		27.9

Table 2 (Cont'd)

Sector	*1971* Employment (1)	% (2)	*1981* Employment (3)	% (4)	Share Change 1971-81 (5)	Employment Growth (%) (6)
			Quebec			
PRI	24,760	1.62	29,850	1.48	−.14	20.6
MFG1	210,390	13.78	242,955	12.08	−1.70	15.5
MFG2	97,775	6.41	123,355	6.13	−.28	26.2
MFG3	59,460	3.90	69,795	3.47	−.43	17.4
CONSTR	72,740	4.77	88,125	4.38	−.39	21.2
TRANS	83,285	5.46	99,810	4.96	−.50	19.8
COMMUN	33,660	2.21	51,585	2.56	.35	53.3
UTIL	14,350	.94	22,230	1.11	.17	54.9
WHOLE	63,195	4.14	100,055	4.97	.83	58.3
RETAIL	158,845	10.41	235,220	11.70	1.29	48.1
FIRE	76,370	5.00	116,330	5.78	.78	52.3
NONPROF	228,110	14.94	337,225	16.77	1.83	47.8
CONSER	118,975	7.79	195,485	9.72	1.93	64.3
PRODSER	44,495	2.92	85,100	4.23	1.31	91.3
PUBLIC	101,965	6.68	146,060	7.26	.58	43.2
UNCLASS	138,095	9.05	67,980	3.38	−5.67	−50.8
QUEBEC	1,526,415	100.00	2,011,190	100.00		31.8

Table 2 (Cont'd)

Sector	*1971* Employment (1)	% (2)	*1981* Employment (3)	% (4)	Share Change 1971-81 (5)	Employment Growth (%) (6)
			Ontario			
PRI	63,020	2.40	71,455	2.05	−.35	13.4
MFG1	247,775	9.45	311,535	8.93	−.52	25.7
MFG2	246,855	9.41	305,290	8.75	−.66	23.7
MFG3	161,940	6.17	196,500	5.63	−.54	21.3
CONSTR	155,220	5.92	178,065	5.10	−.82	14.7
TRANS	99,980	3.81	132,225	3.79	−.02	32.3
COMMUN	49,080	1.87	76,200	2.18	.31	55.3
UTIL	28,045	1.07	37,770	1.08	.01	34.7
WHOLE	111,495	4.25	170,890	4.90	.65	53.3
RETAIL	287,555	10.96	408,995	11.72	.76	42.2
FIRE	137,305	5.23	225,485	6.46	1.23	64.2
NONPROF	354,650	13.52	480,320	13.77	.25	35.4
CONSER	207,025	7.89	353,940	10.15	2.26	71.0
PRODSER	80,729	3.08	178,195	5.11	2.03	120.8
PUBLIC	214,400	8.17	266,350	7.63	−.54	24.2
UNCLASS	177,875	6.78	95,360	2.73	−4.05	−46.4
ONTARIO	2,622,885	100.00	3,488,665	100.00		33.0

Table 2 (Cont'd)

Sector	*1971* Employment (1)	% (2)	*1981* Employment (3)	% (4)	Share Change 1971-81 (5)	Employment Growth (%) (6)
			Prairie Provinces			
PRI	37,440	4.52	71,425	5.44	.92	90.8
MFG1	56,800	6.86	71,055	5.41	−1.45	25.1
MFG2	34,080	4.12	57,980	4.41	.29	70.1
MFG3	15,145	1.83	18,010	1.37	−.46	18.9
CONSTR	54,410	6.57	113,305	8.62	2.05	108.2
TRANS	51,005	6.16	75,375	5.74	−.42	47.8
COMMUN	21,085	2.55	33,385	2.54	−.01	58.3
UTIL	9,535	1.15	15,270	1.16	.01	60.1
WHOLE	45,040	5.44	73,900	5.62	.18	64.1
RETAIL	102,290	12.36	163,620	12.45	.09	60.0
FIRE	40,455	4.89	82,625	6.29	1.40	104.2
NONPROF	130,005	15.71	190,590	14.51	−1.20	46.6
CONSER	75,000	9.06	134,055	10.20	1.14	78.7
PRODSER	23,390	2.83	71,245	5.42	2.59	204.6
PUBLIC	76,855	9.28	109,315	8.32	−.96	42.2
UNCLASS	55,160	6.66	32,940	2.51	−4.15	−40.3
PRAIRIES	827,775	100.00	1,313,950	100.00		58.7

Table 2 (Cont'd)

Sector	*1971* Employment (1)	% (2)	*1981* Employment (3)	% (4)	Share Change 1971-81 (5)	Employment Growth (%) (6)
			British Columbia			
PRI	27,195	4.13	35,505	3.64	−.49	30.6
MFG1	67,970	10.31	82,470	8.45	−1.86	21.3
MFG2	28,825	4.37	38,400	3.93	−.44	33.2
MFG3	10,145	1.54	15,070	1.54	0.00	48.5
CONSTR	44,160	6.70	68,750	7.04	.34	55.7
TRANS	42,500	6.45	58,085	5.95	−.50	36.7
COMMUN	15,560	2.36	23,795	2.44	.08	52.9
UTIL	6,905	1.05	9,760	1.00	−.05	41.3
WHOLE	34,870	5.29	52,745	5.40	.11	51.3
RETAIL	79,535	12.07	122,870	12.59	.52	54.5
FIRE	35,330	5.36	61,540	6.31	.95	74.2
NONPROF	85,475	12.97	140,810	14.43	1.46	64.7
CONSER	64,195	9.74	108,785	11.15	1.41	69.5
PRODSER	21,890	3.32	51,335	5.26	1.94	134.5
PUBLIC	46,430	7.04	73,740	7.56	.52	58.8
UNCLASS	48,190	7.31	32,315	3.31	−4.00	−32.9
BRITISH COLUMBIA	659,170	100.00	976,040	100.00		48.1

Table 3
Profile of Sectoral Share Changes, Canadian Urban System, by Region 1971-1981[a]

	Atlantic	Quebec	Ontario	Prairies	British Columbia
PRI	0	0	-	++	-
MFG1	0	---	-	--	---
MFG2	-	-	-	+	-
MFG3	0	-	-	-	0
CONSTR	--	-	--	+++	+
TRANS	--	-	0	-	-
COMMUN	0	+	+	0	0
UTIL	0	0	0	0	0
WHOLE	0	++	+	0	0
RETAIL	++	++	++	0	+
FIRE	++	++	++	++	++
NONPROF	+++	+++	+	--	++
CONSER	+++	+++	+++	++	++
PRODSER	++	++	+++	+++	+++
PUBLIC	-	+	-	--	+

[a] Key:
0 = change in share less than .25 in either direction
+ or - = change in share .26-.75 in either direction
++ or -- = change in share .76-1.5 in either direction
+++ or --- = change in share greater than 1.51 in either direction

except for the Prairies. The same decline may be observed for manufacturing, construction, and transportation with the sole exceptions of manufacturing 2 (metals, machinery, chemicals, minerals) and construction in the Prairies, and construction in B.C. It is worth noting that traditional manufacturing (MFG1) suffered the greatest reduction in share in Quebec and British Columbia. Very little readjustment occurred in the communications, utilities, and wholesaling sectors, with the exception of an increase in wholesaling in Quebec. The public administration sector declined in all regions except Quebec and British Columbia.

Retailing experienced the largest positive share changes in the Atlantic provinces, Quebec and Ontario. Finance, insurance and real estate (FIRE) underwent a considerable increase in all regions. The non-profit service sector increased most markedly in the Atlantic provinces and Quebec, followed by British Columbia; its share declined sharply in the Prairies. Finally, both consumer and producer services increased in share in all provinces, with the former increasing most significantly in the Atlantic provinces, Quebec and Ontario, and the latter increasing most significantly in Ontario, the Prairies and British Columbia. Thus, it appears that consumer services are taking on special importance as a source of employment in the east, and that the same can be said for producer services in the west; both are important sources of employment in Ontario.

In 1981, the non-profit sector manifests the largest share of employment in all five regions, with retailing second in four (it is third in Quebec). Public Administration is third in the Atlantic provinces; in Ontario, the Prairies and British Columbia the third position is occupied by consumer services. In Quebec, traditional manufacturing (MFG1) is second in terms of share.

Further information on the economic structure of the five urban-based regions can be derived through the use of shift-and-share analysis (Martin, 1976; Statistics Canada, 1974). Briefly, this technique is able to partition employment growth in a given sector in a given region into two components: (1) an industrial composition or *share* effect which measures the performance of each sector in a region relative to each sector in the economy as a whole; and (2) a regional composition or *shift* effect which measures the performance of each sector in a given region relative to the performance of corresponding sectors in other regions. The industrial mix or share analysis performed for the five regions simply reinforces the findings outlined above: in all five regions the highest level of growth occurred in producer services, followed by consumer services and FIRE. In all regions these sectors were followed by moderate growth in wholesaling, communications, utilities, retailing, and non-profit services. The Prairie region is an exception as its construction and primary sectors made it into this moderate growth group. In all regions, the primary (except for the Prairies), manufacturing, transport, and public administration sectors were relatively weak.

Table 4 summarizes the shift component of employment change by region. The Atlantic provinces, Quebec, and Ontario lost ground to other regions in the majority of sectors.[1] For these three regions, major negative shifts occurred in the primary industries and construction. The Atlantic region suffered additional major negative shifts in manufacturing 2, transportation, communications, wholesaling, producer services and public administration; the principal positive shift came in the FIRE sector. Quebec's major negative shift occurred in producer services, with FIRE also being significant; utilities and public administration accounted for the principal positive shifts. Ontario's other shifts were moderate in both directions. It comes as no surprise that the rapid growth region was the Prairies, which experienced a minor negative shift in manufacturing 3. All other sectors had positive shifts, with the primary sector, manufacturing 2, construction, FIRE and producer services being most significant. Only five B.C. sectors experienced negative shifts, and these were all moderate. Major positive shifts came in the areas of manufacturing 3, construction, non-profit services, and public administration.

A final and related method of analyzing the structural changes in the economy of each region involves the use of location quotients. Briefly, a location quotient is an index of specialization which compares the concentration of a given sector in a region to its concentration in the system as a whole. Thus a sector with the same level of concentration in a region as in the reference system as a whole will have a value of 100; values below 100 indicate a low degree of concentration relative to the reference system, while those above 100 indicate a higher degree of concentration. Table 5 presents location quotients for 1981 and indicates the direction of movement in the location quotient over the period 1971-1981. A positive change value indicates increasing concentration or specialization, while a negative value indicates decreasing concentration. The results shown in Table 5 are generally consistent with those presented above; they do serve to highlight regional specializations and the direction of change of sectoral concentrations. Note that, due to the differences in the two methods, it is possible for a given sector in a given region to exhibit an increasing location quotient (Table 5)

Table 4
Shift Effect, Canadian Urban System, by Region 1971-1981
%

	Atlantic	Quebec	Ontario	Prairies	British Columbia
PRI	−7.9	−11.0	−16.3	40.8	−3.7
MFG1	1.6	−5.0	3.4	2.9	−0.2
MFG2	−18.7	−1.6	−3.5	32.7	3.9
MFG3	4.1	−3.4	−0.1	−2.1	22.3
CONSTR	−19.7	−10.5	−15.3	53.8	15.0
TRANS	−16.1	−8.0	1.5	13.4	4.9
COMMUN	−10.2	−0.3	1.0	3.0	−0.5
UTIL	0.6	7.1	−6.8	10.8	−2.2
WHOLE	−14.6	2.4	−0.8	6.2	−2.1
RETAIL	−7.5	0.5	−3.5	8.6	4.8
FIRE	6.4	−9.5	−2.5	21.3	3.4
NONPROF	0.4	2.7	−5.9	1.8	14.4
CONSER	−8.0	−3.0	0.9	5.5	0.0
PRODSER	−10.4	−15.1	−2.0	35.2	4.1
PUBLIC	−9.7	7.0	−7.2	6.2	18.6

Table 5
Location Quotients, Canadian Urban System, by Region 1971-1981

	Atlantic		Quebec		Ontario		Prairies		British Columbia	
	LQ[1]	Ch[2]	LQ	Ch	LQ	Ch	LQ	Ch	LQ	Ch
PRI	151	−1	54	−4	74	−12	197	35	132	−15
MFG1	74	6	135	−1	100	7	60	−8	94	−8
MFG2	37	−6	94	2	135	0	68	9	61	−2
MFG3	48	5	93	1	151	5	37	−6	41	5
CONSTR	91	−15	77	−5	89	−13	151	38	123	8
TRANS	115	−12	105	−4	80	4	121	−2	126	−3
COMMUN	116	−4	107	4	91	4	106	−13	102	−8
UTIL	110	8	101	11	99	−3	106	−4	91	−9
WHOLE	98	−9	98	7	96	2	110	−10	106	−11
RETAIL	110	−1	97	4	98	0	104	−6	105	−2
FIRE	83	11	94	−5	105	1	102	5	102	−4
NONPROF	121	9	112	7	92	−3	97	−13	97	6
CONSER	97	−1	96	1	100	4	101	−9	110	−8
PRODSER	66	−2	87	−11	105	1	112	17	108	−4
PUBLIC	164	−5	91	9	96	−4	105	−9	95	9

[1] All Location quotients are for 1981.

[2] Change: Indicates change from 1971 to 1981, i.e. 1981LQ-1971LQ.

and a negative shift effect (Table 4), or vice-versa, over the period 1971-1981. Although a sector in a region may be increasing or decreasing, it may be doing so at a differential rate relative to other regions.

Size Differences

An aspect of economic structure every bit as interesting and important as regional differences concerns variations by urban size category. In order to investigate this, five size classes or "pseudo-regions" have been constructed on the basis of the 1981 population size:

Size 1: greater than 300,000 (N = 10)
Size 2: 100,001 to 300,000 (N = 16)
Size 3: 50,001 to 100,000 (N = 19)
Size 4: 30,001 to 50,000 (N = 34)
Size 5: less than or equal to 30,000 (N = 43).

Table 6 summarizes 1981 sectoral composition, and 1971-1981 changes, by size category. Size 4 employment increased most rapidly, while that of size 5 increased most slowly. For all size categories, greatest employment growth (column (3)) occurred in producer services, followed by consumer services and FIRE. In general, lowest levels of growth occurred in manufacturing; the notable exception to this was the slow growth of primary, construction, and transportation sectors in size 5. In terms of 1981 sectoral composition (column (1)), the non-profit, retail and consumer sectors are most significant in all size categories, with manufacturing 1 appearing ahead of consumer services in sizes 4 and 5, and the primary sector approaching consumer services in size 5. Utilities and communication tend to be the smallest sectors in all size categories, being joined by the primary sector for sizes 1 and 2, and by producer services for sizes 3, 4, and 5 (along with manufacturing 3 for size 5). Producer services, FIRE, and wholesaling decrease as a proportion of total employment as size decreases; the primary sector and manufacturing 1 generally increase in proportion with decreasing size. Consumer services, the non-profit and retail sectors, and utilities and communications tend to remain steady across size categories.

Table 7 summarizes the direction and relative magnitude of the change in sectoral shares over the period 1971-1981. For many sectors the direction and/or magnitude of changes are constant over size categories, reflecting national economic trends. For example, consumer services, FIRE, and wholesaling show uniformly positive changes, albeit of differing degrees: utilities are unchanging; and manufacturing 1 is uniformly negative.

Table 6
Sectoral Shares, Canadian Urban System, by Size Categories, 1971-1981

	Size 1			Size 2			Size 3			Size 4			Size 5		
	(1)[a]	(2)[b]	(3)[c]	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
PRI	1.8	0.2	55.4	2.9	-0.6	9.5	3.4	-0.4	23.0	7.5	0.2	50.2	9.0	-1.0	12.4
MFG1	8.8	-1.3	21.0	7.9	-0.9	18.3	9.2	-1.0	23.9	10.2	-1.2	31.6	12.9	-0.5	20.6
MFG2	6.6	-0.6	27.8	5.5	-0.4	23.5	9.3	-0.7	27.6	5.7	0.0	47.7	5.2	0.0	25.2
MFG3	3.7	-0.6	20.5	4.9	-0.4	21.1	3.1	-0.5	16.8	3.5	-0.2	38.0	2.0	0.0	25.0
CONSTR	5.7	-0.1	35.7	5.5	-0.3	25.2	6.4	0.2	42.0	6.4	0.7	65.9	4.6	-0.6	11.9
TRANS	5.1	-0.2	33.4	4.0	-0.3	22.0	4.5	-0.5	23.5	4.1	-0.6	28.5	3.8	-0.2	17.8
COMMUN	2.5	0.3	55.9	2.3	0.3	50.3	2.0	0.2	48.4	2.0	0.1	56.8	1.8	0.1	28.7
UTIL	1.1	0.1	45.8	1.1	0.1	49.1	1.2	-0.1	28.7	1.2	0.0	52.1	1.3	0.1	30.7
WHOLE	5.6	0.6	54.8	4.4	0.5	47.6	4.5	0.7	62.8	4.0	0.5	66.4	3.3	0.4	44.7
RETAIL	11.6	0.6	46.3	12.5	1.0	42.8	13.6	1.3	51.5	13.3	1.5	66.0	13.0	1.7	44.6
FIRE	6.9	1.2	67.5	5.6	1.1	65.0	4.2	0.9	75.6	3.8	0.9	93.1	3.6	0.9	65.4
NONPROF	14.0	0.6	44.8	17.9	1.1	39.9	15.3	0.8	44.8	15.9	0.5	51.8	16.4	1.3	35.9
CONSER	10.2	1.8	69.4	10.2	2.1	65.7	10.6	2.4	78.3	9.8	1.8	79.5	9.4	1.8	53.9
PRODSER	5.8	2.3	127.9	3.5	1.3	110.8	2.9	1.1	126.2	2.3	0.9	143.7	2.3	0.8	86.4
PUBLIC	7.8	-0.1	36.4	9.1	-0.3	27.9	7.3	-0.2	34.2	7.5	-0.6	35.6	8.5	-0.3	21.4
UNCLASS	2.9	-4.6	-45.0	2.7	-4.3	-48.0	2.6	-4.3	-47.2	2.8	-4.6	-44.2	3.1	-4.3	-47.1
SIZE CLASS	100.0	-	38.9	100.0	-	31.7	100.0	-	37.3	100.0	-	46.8	100.0	-	25.3

[a] (1) = 1981 percentage composition of size category employment.
[b] (2) = 1971-1981 change in (1).
[c] (3) = 1971-1981 change in employment, expressed as a percentage.

Table 7
Profile of Sectoral Share Changes, Canadian Urban System, by Size Categories, 1971-1981

	Size 1	Size 2	Size 3	Size 4	Size 5
PRI	0	-	-	0	- -
MFG1	- -	- -	- -	- -	- -
MFG2	-	-	-	0	0
MFG3	-	-	-	0	0
CONSTR	0	-	0	+	- -
TRANS	0	-	-	-	0
COMMUN	+	+	0	0	0
UTIL	0	0	0	0	0
WHOLE	+	+	+	+	+
RETAIL	+	+ +	+ +	+ + +	+ + +
FIRE	+ +	+ +	+ +	+ +	+ +
NONPROF	+	+ +	+	+	+ +
CONSERV	+ + +	+ + +	+ + +	+ + +	+ + +
PRODSER	+ + +	+ + +	+ +	+ +	+
PUBLIC	0	-	0	-	-

Key:
0 = change less than 0.3 in either direction
+ or - = change .3-.8 in either direction
+ + or - - = change .9-1.4 in either direction
+ + + or - - - = change greater than 1.5 in either direction

Size appears to affect the *degree* of change for producer services (where level of increase is directly proportional to size) and for retailing (where level of increase is inversely proportional to size); it affects the *direction* of change for manufacturing 2 and 3 (where size categories 1-3 decreased, while categories 4-5 remained relatively constant) and for communications (where sizes 1 and 2 increased, while the remaining sizes remained constant).

Table 8 presents the shift component of employment change by size category. Recall that this measure indicates the performance of a sector in a given region (here, size category) relative to the performance of the same sector in other regions. Size 2 and size 5 categories lost ground to other size levels in the majority of sectors with the sole exceptions of utilities (size 2) and manufacturing 3 (size 5). Conversely, the shift effects in size 4 were positive in all sectors, with the exception of transportation. Size 1 shows generally weak positive shifts except in manufacturing, retailing and FIRE, which are negative, and in the primary sector which was strongly positive. The pattern of Size 3 shift effects is less clear-cut. Major negative shifts are in the primary and utility sectors, with moderate positive shifts in consumer services, wholesaling and construction. In sum, the net direction of employment change can be generally stated as a shift from size categories 2 and 5 towards category 4. This is particularly apparent in the growth sectors: producer services, consumer services, and FIRE.

Table 9 summarizes the degree of sectoral specialization for each size category. Size 1 cities are most specialized in producer services, FIRE, and wholesaling; the former concentration has remained stable while the latter two have decreased slightly. Size 1 cities are least specialized in primary industries, although the concentration in this sector increased over the period 1971-1981. Size 2 cities are most specialized in manufacturing 3 and non-profit services; they are relatively weak in producer services. Size 3 cities show the highest concentration of employment in manufacturing 2 and the primary sector; producer services and FIRE are very weak. Size 4 cities are highly specialized in the primary sector, and this concentration increased over the period. Once again, producer services and FIRE are still very weak concentrations, although they are increasing. Size 5 cities show a similar pattern, with several exceptions: primary industries and producer services became less concentrated over the period, while manufacturing 1 is highly concentrated and growing.

Table 8
Shift Effect, Canadian Urban System, by Size Category, 1971-1981
%

	Size 1	Size 2	Size 3	Size 4	Size 5
PRI	14.7	−19.2	−9.2	10.8	−17.0
MFG1	−0.5	−2.7	1.9	8.2	−0.8
MFG2	−0.3	−3.6	−0.4	15.3	−2.4
MFG3	−0.8	−0.3	−3.9	13.6	2.9
CONSTR	0.2	−7.6	4.8	22.5	−17.4
TRANS	2.4	−6.3	−5.2	−1.4	−9.6
COMMUN	1.4	−2.2	−3.4	2.0	−16.2
UTIL	0.9	3.2	−11.0	5.2	−9.6
WHOLE	0.1	−4.5	5.3	7.6	−6.4
RETAIL	−0.7	−3.1	2.8	12.7	−1.9
FIRE	−0.5	−2.0	4.3	14.7	−1.8
NONPROF	0.6	−2.8	0.6	5.5	−5.6
CONSER	0.0	−2.2	5.2	6.0	−9.2
PRODSER	1.2	−6.4	0.4	8.1	−17.3
PUBLIC	1.8	−4.5	0.2	1.3	−9.4

Table 9
Location Quotients, Canadian Urban System, by Size Category, 1971-1981

	Size 1		Size 2		Size 3		Size 4		Size 5	
	LQ[1]	Ch[2]	LQ	Ch	LQ	Ch	LQ	Ch	LQ	Ch
PRI	65	7	106	−19	124	−12	272	10	325	−31
MFG1	99	−1	88	2	102	2	114	1	144	12
MFG2	101	−2	85	0	144	0	88	7	80	6
MFG3	98	−2	131	6	83	−4	94	6	53	6
CONSTR	99	−1	97	−3	112	5	111	14	81	−8
TRANS	107	2	84	−2	95	−5	87	−7	79	−1
COMMUN	106	1	96	2	84	−3	85	−4	74	−7
UTIL	98	0	98	7	105	−13	113	−2	115	−1
WHOLE	109	−1	87	0	88	5	79	1	65	2
RETAIL	96	−2	104	1	113	3	110	5	108	8
FIRE	112	−2	90	2	68	3	61	4	58	5
NONPROF	94	0	120	2	102	1	107	−1	110	4
CONSER	100	−1	101	2	104	5	96	−1	92	−1
PRODSER	119	0	72	−2	60	1	47	1	48	−5
PUBLIC	98	1	114	0	91	0	94	−5	106	−1

[1] All Location quotients are for 1981.

[2] Change: Indicates change from 1971 to 1981, i.e. 1981LQ-1971LQ.

Individual Urban Areas

A detailed analysis of the economic role of individual urban areas is beyond the scope of this general overview. Table 10, however, does present some basic information concerning each of the 122 urban areas. First, the sectors with the three largest location quotients are shown, in descending order; sectors are only listed if they have a location quotient greater than 10 percent above the system norm (i.e. greater than 110). This information indicates the relative economic specializations of each urban area. Second, Table 10 shows the three sectors that have experienced the largest location quotient changes over the period 1971-1981, again in descending order; the direction of the change is also indicated.

Several interesting points emerge from Table 10. First, the high degree of specialization of Labrador City, Oromocto, Magog, Asbestos, Petawawa, and Sault Ste. Marie is evident. Second, one can observe a high degree of manufacturing 1 specialization in Quebec, and of primary sector specialization in the West. In much of the West, growing specialization occurred in the construction sector, reflecting general economic expansion. A third set of observations concerns the important producer services and FIRE sectors. Only a small set of urban areas have a significant specialization in these sectors: Ottawa-Hull, Pembroke, Toronto, Calgary and Vancouver (producer services); Toronto and London (FIRE). Toronto is the only case in which producer services have the highest location quotient. Similarly, a small number of urban areas showed significantly increased specialization in these sectors over the period. Montreal experienced a significant reduction in level of specialization for both of these sectors.

Occupational Structure

In order to determine the structural characteristics of the Canadian space-economy it is not sufficient to examine each sector's relative share of employment; this method of analysis masks a considerable amount of information concerning the nature of the economic activity occurring within each sector. For example, the conventional wisdom is that the manufacturing sector is utilizing increasing proportions of service inputs, but this cannot be determined by the types of analyses performed in the previous sections. Rather, an examination of the occupational structure within sectors is required. This section is concerned with such an analysis.

In order to facilitate the presentation of results, twelve occupational types have been collapsed into three categories:

Table 10
Specialization and Change
Canadian Urban Areas, 1971-1981

		Largest 1981 Location Quotients	Largest 1971-1981 Location Quotient Changes
Newfoundland			
1.	St. John's	Public, Nonprof, Util	Trans(-), Whole(-), Public
2.	Carbonear	Util, Mfg1, Pri	Constr(-), Util, Trans(-)
3.	Grand Falls	Mfg1, Nonprof, Whole	Constr(-), Util(-), Whole
4.	Corner Brook	Mfg1, Whole, Retail	Constr(-), Fire, Whole(-)
5.	Labrador City	Pri	Constr(-), Pri, Trans
Prince Edward Island			
6.	Charlottetown	Pri, Public, Nonprof	Whole(-), Util(-), Trans(-)
7.	Summerside	Public, Pri, Retail	Public(-), Pri, Conser
Nova Scotia			
8.	Halifax	Public, Commun, Nonprof	Public(-), Util(-), Pri
9.	Kentville	Pri, Mfg1, Retail	Pri(-), Util(-), Mfg1
10.	Truro	Pri, Mfg1, Trans	Constr(-), Mfg1, Mfg3
11.	New Glasgow	Mfg3, Pri, Util	Mfg1, Pri(-), Constr(-)
12.	Sydney	Pri, Util, Mfg2	Pri(-), Mfg3(-), Util
13.	Sydney Mines	Pri, Trans, Nonprof	Pri(-), Trans(-), Mfg1

Table 10 (Cont'd)

		Largest 1981 Location Quotients	Largest 1971-1981 Location Quotient Changes
New Brunswick			
14.	Moncton	Trans, Whole, Commun	Trans(-), Retail(-), Util
15.	Saint John	Commun, Util, Trans	Util, Mfg3, Commun
16.	Oromocto	Public	Mfg3, Public(-), Util
17.	Fredericton	Util, Public, Pri	Pri, Constr(-), Trans(-)
18.	Bathurst	Pri, Retail, Public	Pri(-), Mfg1(-), Public
19.	Campbellton	Nonprof, Trans, Retail	Trans(-), Mfg3, Mfg1
20.	Edmunston	Mfg1, Pri, Nonprof	Trans(-), Nonprof(-), Mfg3
Quebec			
21.	Rimouski	Commun, Nonprof, Util	Util(-), Commun, Constr(-)
22.	Riv.-du-Loup	Nonprof, Pri, Commun	Trans(-), Commun(-), Whole
23.	Baie-Comeau	Util, Mfg2, Mfg1	Util(-), Pri(-), Public
24.	Chicoutimi-Jonq.	Mfg2, Nonprof	Constr, Whole, Util
25.	Dolbeau	Pri, Mfg1, Nonprof	Mfg1, Public, Conser
26.	Sept-Isles	Pri, Trans, Util	Pri(-), Constr(-), Trans(-)
27.	Quebec	Public, Nonprof	Constr(-), Public, Fire
28.	Saint-Georges	Mfg1, Nonprof, Constr	Mfg2, Nonprof(-), Mfg3
29.	Thetford Mines	Pri, Nonprof	Pri(-), Mfg3, Mfg1
30.	Sherbrooke	Nonprof, Mfg1	Constr(-), Public, Retail
31.	Magog	Mfg1	Pri(-), Mfg2, Constr
32.	Asbestos	Pri	Pri(-), Mfg1, Mfg3(-)
33.	Victoriaville	Mfg1, Util, Nonprof	Whole, Util, Conser
34.	Trois-Rivieres	Util, Mfg1, Nonprof	Util, Commun, Trans(-)
35.	Shawinigan	Mfg1, Mfg2, Util	Util(-), Mfg2(-), Mfg1

Table 10 (Cont'd)

		Largest 1981 Location Quotients	Largest 1971-1981 Location Quotient Changes
36.	La Tuque	Mfg1, Util, Nonprof	Util, Commun(-), Mfg1
37.	Drummondville	Mfg1, Mfg3	Mfg1(-), Whole, Util(-)
38.	Granby	Mfg1, Mfg2, Mfg3	Mfg2, Mfg1(-), Util(-)
39.	Saint-Hyacinthe	Mfg1, Nonprof, Util	Util, Whole, Pri(-)
40.	Sorel	Mfg2, Constr, Mfg3	Mfg3(-), Mfg2, Constr
41.	Joliette	Mfg1, Nonprof, Retail	Commun, Util(-), Whole
42.	St.-Jean-sur-Rich.	Public, Mfg3, Mfg1	Util, Nonprof, Fire
43.	Montreal	Mfg1, Trans, Mfg3	Util, Prodser(-), Fire(-)
44.	Salaberry-de Val.	Mfg1, Mfg2, Util	Util(-), Mfg1, Pri
45.	LaChute	Mfg1, Pri, Mfg2	Mfg2(-), Trans, Mfg3
46.	Saint-Jerome	Util, Mfg1, Mfg3	Util, Trans, Public
47.	Val-d'Or	Pri, Commun, Conser	Pri(-), Public(-), Mfg1
48.	Rouyn	Pri, Util, Nonprof	Pri(-), Constr(-), Public
49.	Matane	Nonprof, Mfg1, Retail	Prodser, Public, Pri(-)
50.	Montmagny	Mfg3, Mfg1, Nonprof	Pri(-), Constr(-), Mfg3
51.	Cowansville	Mfg1, Mfg2	Mfg1(-), Mfg2, Util
52.	Alma	Util, Mfg1, Mfg2	Pri, Mfg1(-), Util
Ontario			
53.	Cornwall	Mfg1, Retail	Mfg2(-), Mfg1, Pri(-)
54.	Hawkesbury	Mfg1, Mfg2, Retail	Mfg1, Mfg2, Mfg3(-)
55.	Ottawa-Hull	Public, Commun, Prodser	Constr(-), Public(-), Prodser
56.	Smiths Falls	Nonprof, Trans, Mfg1	Trans(-), Mfg1, Util
57.	Brockville	Mfg3, Mfg2, Pri	Mfg2, Prodser(-), Whole(-)
58.	Pembroke	Pri, Prodser, Mfg1	Prodser(-), Public(-), Mfg1

Table 10 (Cont'd)

		Largest 1981 Location Quotients	Largest 1971-1981 Location Quotient Changes
59.	Petawawa	Public	Public(-), Retail, Commun
60.	Kingston	Public, Nonprof	Prodser(-), Pri(-), Mfg3
61.	Belleville	Mfg3, Trans, Util	Util(-), Public(-), Mfg1
62.	Trenton	Public, Mfg3, Mfg1	Public(-), Mfg3, Mfg1
63.	Cobourg	Mfg1, Mfg3, Mfg2	Mfg3, Pri(-), Public
64.	Peterborough	Mfg3, Retail, Pri	Mfg3, Mfg2(-), Prodser(-)
65.	Lindsay	Mfg1, Pri, Mfg3	Trans, Mfg1, Public(-)
66.	Oshawa	Mfg3, Util	Util, Mfg3(-), Whole
67.	Toronto	Prodser, Mfg3, Fire	Constr(-), Mfg1, Util(-)
68.	Hamilton	Mfg2, Mfg3	Mfg3(-), Mfg2, Constr(-)
69.	St. Catherines	Mfg3, Mfg2, Conser	Util(-), Mfg3, Conser
70.	Kitchener	Mfg1, Mfg2, Mfg3	Mfg2, Mfg3, Constr(-)
71.	Brantford	Mfg2, Mfg3, Mfg1	Mfg2, Mfg3, Mfg1(-)
72.	Guelph	Mfg3, Mfg2, Nonprof	Mfg2, Constr(-), Mfg3
73.	Fergus	Pri, Mfg2, Mfg3	Mfg3(-), Mfg2, Commun(-)
74.	Stratford	Mfg3, Mfg2, Mfg1	Pri(-), Mfg1, Fire
75.	London	Mfg3, Nonprof, Fire	Mfg3, Constr(-), Util
76.	Chatham	Util, Mfg3, Pri	Constr, Pri, Trans
77.	Leamington	Pri, Mfg1, Whole	Pri, Util, Constr(-)
78.	Windsor	Mfg3, Conser, Mfg2	Mfg3(-), Util(-), Prodser(-)
79.	Sarnia	Mfg2, Constr, Util	Util(-), Mfg2, Mfg3(-)
80.	Owen Sound	Util, Mfg3, Mfg2	Util, Pri(-), Mfg3
81.	Barrie	Retail, Util, Commun	Util(-), Pri(-), Trans
82.	Orillia	Mfg2, Nonprof, Util	Util, Mfg2(-), Mfg3
83.	Midland	Mfg3, Mfg1, Nonprof	Mfg3, Mfg1, Trans(-)

Table 10 (Cont'd)

		Largest 1981 Location Quotients	Largest 1971-1981 Location Quotient Changes
84.	North Bay	Util, Trans, Public	Public(-), Commun(-), Mfg2
85.	Sudbury	Pri, Mfg2	Pri(-), Constr(-), Commun
86.	Haileybury	Pri, Commun, Retail	Util(-), Pri, Commun(-)
87.	Sault Ste. Marie	Mfg2	Mfg2, Trans(-), Conser
88.	Thunder Bay	Trans, Util, Mfg1	Mfg3, Util, Mfg1
89.	Kenora	Trans, Mfg1, Util	Commun(-), Public, Whole
90.	Newcastle	Mfg3, Pri, Util	Util, Pri, Mfg3
91.	Timmins	Pri, Retail	Pri, Mfg2, Util
Manitoba			
92.	Winnipeg	Trans, Util, Public	Whole(-), Trans, Mfg3(-)
93.	Portage	Pri, Public, Nonprof	Pri(-), Commun(-), Public(-)
94.	Flin Flon	Pri, Mfg2	Pri, Mfg2, Commun(-)
95.	Thomson	Pri, Util, Mfg2	Pri(-), Public, Constr(-)
96.	Brandon	Util, Nonprof, Retail	Commun(-), Util, Conser
Saskatchewan			
97.	Regina	Commun, Public, Util	Constr, Trans(-), Commun
98.	Moose Jaw	Public, Pri, Trans	Constr, Conser, Commun
99.	Swift Current	Pri, Retail, Util	Public(-), Trans(-), Commun(-)
100.	Saskatoon	Pri, Nonprof, Whole	Pri, Nonprof(-), Constr
101.	North Battleford	Pri, Nonprof, Retail	Constr, Whole(-), Nonprof(-)
102	Prince Albert	Pri, Public, Constr	Public, Mfg1(-), Constr

Table 10 (Cont'd)

	Largest 1981 Location Quotients	Largest 1971-1981 Location Quotient Changes
Alberta		
103. Medicine Hat	Pri, Constr, Retail	Constr, Pri(-), Trans(-)
104. Calgary	Pri, Constr, Prodser	Pri, Constr, Prodser
105. Edmonton	Constr, Pri, Whole	Constr, Commun(-), Prodser
106. Lethbridge	Constr, Retail, Util	Commun(-), Constr, Mfg3(-)
107. Red Deer	Pri, Constr, Retail	Constr, Pri, Nonprof(-)
108. Fort McMurray	Pri, Constr	Pri, Whole, Prodser
British Columbia		
109. Trail	Pri, Mfg2, Util	Pri, Mfg2(-), Whole(-)
110. Kelowna	Pri, Constr, Conser	Pri(-), Util(-), Mfg3
111. Vernon	Pri, Util, Constr	Pri(-), Util(-), Commun(-)
112. Kamloops	Pri, Constr, Trans	Pri, Constr(-), Public
113. Chilliwack	Pri, Public, Constr	Pri(-), Util(-), Constr
114. Vancouver	Trans, Prodser, Whole	Whole(-), Conser(-), Public
115. Victoria	Public, Constr, Conser	Util(-), Constr, Commun(-)
116. Nanaimo	Pri, Constr, Retail	Pri(-), Util(-), Constr
117. Port Alberni	Pri, Mfg1	Pri(-), Public, Commun(-)
118. Courtenay	Pri, Public, Constr	Public, Constr, Pri(-)
119. Powell River	Pri, Mfg1	Constr, Trans, Mfg1(-)
120. Prince Rupert	Mfg1, Pri, Trans	Util(-), Commun(-), Mfg1
121. Terrace	Pri, Mfg2, Mfg1	Pri(-), Public, Constr
122. Prince George	Mfg1, Constr, Trans	Pri(-), Commun(-), Trans(-)

- professional occupations: directors, administrators, teachers, medicine and health, technical personnel, and so forth;
- intermediate occupations: office employees (clerks, secretaries, etc.), sales, and service (e.g. hotel, restaurant) personnel;
- production occupations: those engaged in primary and transformation activities, factory and construction workers, other.

Thus, the first two categories are essentially composed of service activities.

Urban System

Table 11 summarizes the distribution of occupation types across sectors for 1971 and 1981. In 1981, approximately two-thirds of all urban system employment fell into the service categories; with the exception of construction, a minimum of approximately 30 percent of employment in the traditional goods-producing sectors was in the non-production categories. One may observe for example the increasing proportion of professional employment, and the decreasing proportions of intermediate and production employment, as one moves from MFG1 to MFG3. The heavy concentration of intermediate employment in the retail, FIRE, and consumer service sectors stands out, as does the concentration of professional employment in the non-profit and producer service sectors.

In terms of changes over the period 1971-1981, all sectors increased their proportion of professional employment. A majority of sectors decreased their intermediate employment, although there was a net gain for the urban system as a whole. Only two sectors increased their proportion of production employment. Thus, for the Canadian urban system, generalizations concerning the "tertiarization" of the economy appear to be accurate.

Regional Variations

Table 12 compares the distribution of occupation types across regions. The Atlantic region is characterized by the highest percentage of intermediate employment and the lowest percentage of production employment in 1981. Quebec has the highest percentage of professional employment and the lowest percentage of intermediate employment. Ontario has the highest level of production employment, and B.C. the lowest level of professional employment. In terms of changes over the period 1971-1981, all regions experienced large increases in professional

Table 11
Occupation Types, Canadian Urban System, 1971-1981

	Professional			Intermediate			Production		
	1971 %	1981 %	Ch[1]	1971 %	1981 %	Ch[1]	1971 %	1981 %	Ch[1]
PRI	11.4	18.1	6.7	10.0	13.1	3.1	78.6	68.8	−9.8
MFG1	8.0	11.3	3.3	26.3	21.8	−4.5	65.7	66.9	1.2
MFG2	12.6	16.9	4.3	22.7	19.8	−2.9	64.7	63.3	−1.4
MFG3	14.9	18.6	3.7	22.4	18.7	−3.7	62.7	62.7	0.0
CONSTR	6.9	10.1	3.2	9.1	11.2	2.1	84.0	78.7	−5.3
TRANS	6.1	9.2	3.1	25.7	25.7	0.0	68.2	65.1	−3.1
COMMUN	17.6	24.0	6.4	59.8	54.2	−5.6	22.6	21.8	−0.8
UTIL	20.9	28.6	7.7	28.1	25.3	−2.8	51.0	46.1	−4.9
WHOLE	9.6	13.8	4.2	60.9	59.0	−1.9	29.5	27.2	−2.3
RETAIL	4.3	6.4	2.1	71.9	72.9	1.0	23.8	20.7	−3.1
FIRE	15.9	20.7	4.8	79.5	76.3	−3.2	4.6	3.0	−1.6
NONPROF	66.7	68.5	1.8	27.5	26.9	−0.6	5.8	4.6	−1.2
CONSER	9.0	12.5	3.5	78.6	76.8	−1.8	12.4	10.7	−1.7
PRODSER	47.6	50.8	3.2	45.4	41.6	−3.8	7.0	7.6	0.6
PUBLIC	25.7	33.0	7.3	58.0	54.0	−4.0	16.3	13.0	−3.3
UNCLASS	1.0	3.1	2.1	3.8	8.6	4.8	95.2	88.3	−6.9
URBAN SYSTEM	19.5	24.6	5.1	40.5	42.6	2.1	40.0	32.8	−7.2

[1] Change: 1981%-1971%

Table 12
Occupation Type by Region, Canadian Urban System, 1971-1981

	Professional			Intermediate			Production		
	1971 %	1981 %	Ch[1]	1971 %	1981 %	Ch[1]	1971 %	1981 %	Ch[1]
Atlantic	19.0	24.7	5.7	42.8	44.5	1.7	38.2	30.8	−7.4
Quebec	20.4	25.6	5.2	38.8	41.6	2.8	40.8	32.8	−8.0
Ontario	19.3	24.3	5.0	40.0	42.3	2.3	40.7	33.4	−7.3
Prairies	20.3	25.4	5.1	43.0	43.4	0.4	36.7	31.2	−5.5
British Coumbia	17.2	23.0	5.8	42.0	43.8	1.8	40.8	33.2	−7.6

[1] Change: 1981%-1971%

employment and large decreases in production employment; gains in the percentage of intermediate employment were more moderate in all regions, except for the Prairies where they were low. In general, regional differences in aggregate occupation structure are not major.

Due to space limitations, a sectoral analysis of occupation type is presented for 1981 only (Table 13). With a small number of exceptions, the occupational structure of each sector does not vary in a major way across regions. First, there is a high concentration of professional and intermediate employment, and a consequent low concentration of production employment, in the Prairies' primary sector. Second, there is a high concentration of production employment, and a consequent low concentration of professional and intermediate employment, in the Atlantic region's transportation sector.

Size Differences

Table 14 shows that there is a high degree of regularity in the manner in which occupation type varies across size categories. In both 1971 and 1981 the percentage of both professional and intermediate employment was highest among the largest cities (size 1) and declined monotonically through the size categories; conversely, the percentage of production employment was lowest among the largest cities and increased monotonically as city size decreased. In terms of changes over the period 1971-1981, the increase in the percentage of professional employment is directly proportional to size, while the increase in intermediate employment is, in general, inversely proportional to size.

Table 15 summarizes variations in the occupation structure of sectors across the size categories in 1981. A number of regularities may be observed. First, in all sectors the highest concentration of professional employment is in the size 1 category; the only exception to this is the non-profit sector where size categories 1, 4, and 5 are equal. Further, in 13 of the 15 sectors the percentage of professional employment generally declines with decreasing urban size. Second, in the primary, manufacturing 3, transportation, and utilities sectors the size 1 category stands out in terms of its concentration of professional and intermediate employment. Third, levels of production employment may be seen to generally vary in an inverse manner relative to urban size for the first ten sectors listed.

Table 13
Occupation Type by Region and By Sector, Canadian Urban System, 1981

	Atlantic			Quebec			Ontario			Prairies			British Columbia		
	PL	I	PN	PL	I	PN	PL	I	PN	PL	I	PN	PL	I	PN
PRI	9.1	8.8	82.1	12.0	11.0	77.0	10.5	9.2	80.3	32.3	19.7	48.0	15.0	12.0	73.0
MFG1	11.5	22.6	65.9	10.3	20.1	69.6	12.2	22.7	65.1	11.2	26.5	62.3	10.6	19.3	70.1
MFG2	13.2	19.7	67.1	16.5	19.8	63.7	17.1	19.5	63.4	17.6	20.3	62.1	15.7	21.0	63.3
MFG3	15.1	15.1	69.8	22.0	20.0	58.0	17.6	17.9	64.5	18.4	22.0	59.6	17.3	20.3	62.4
CONSTR	10.4	11.7	77.9	9.9	13.0	77.1	9.6	11.3	79.1	11.6	10.3	78.1	9.2	9.7	81.1
TRANS	4.1	10.6	85.3	11.3	25.7	63.0	8.2	26.2	65.6	9.2	23.8	67.0	8.3	29.1	62.6
COMMUN	27.0	52.4	20.6	25.2	54.7	20.1	24.2	55.4	20.4	24.2	51.1	24.7	18.9	54.8	26.3
UTIL	28.9	25.0	46.1	33.4	25.8	40.8	26.7	24.9	48.4	25.8	25.3	48.9	29.0	25.7	45.3
WHOLE	10.7	61.0	28.3	13.5	61.1	25.4	15.2	56.8	28.0	12.8	60.3	26.9	12.8	59.2	28.0
RETAIL	5.0	75.6	19.4	7.1	70.9	22.0	6.5	73.3	20.2	6.0	73.7	20.3	6.3	73.1	20.6
FIRE	22.3	74.4	3.3	20.8	76.7	2.5	21.2	75.7	3.1	20.8	75.7	3.5	17.8	78.9	3.3
NONPROF	67.1	26.7	6.2	70.6	25.3	4.1	68.2	27.5	4.3	67.5	27.7	4.8	66.9	28.2	4.9
CONSER	10.3	78.8	10.9	13.1	75.9	11.0	13.1	76.9	10.0	11.3	77.2	11.5	11.9	77.0	11.1
PRODSER	49.0	43.2	7.8	50.3	43.2	6.5	49.8	42.2	8.0	53.2	38.1	8.7	52.8	41.0	6.2
PUBLIC	28.5	55.7	15.8	31.6	55.3	13.1	34.9	53.7	11.4	34.1	51.9	14.0	31.2	53.9	14.9

Note:
PL = Professional
I = Intermediate
PN = Production

Table 14
Occupation Type by Size Category, Canadian Urban System, 1971-1981

	Professional			Intermediate			Production		
	1971 %	1981 %	Ch[1]	1971 %	1981 %	Ch[1]	1971 %	1981 %	Ch[1]
Size 1	20.2	25.7	5.5	41.5	43.4	1.9	38.3	30.9	−7.4
Size 2	19.2	24.4	5.2	40.3	42.6	2.3	40.5	33.0	−7.5
Size 3	17.5	21.6	4.1	37.8	40.8	3.0	44.7	37.6	−7.1
Size 4	17.1	20.7	3.6	36.3	39.1	2.8	46.6	40.2	−6.4
Size 5	17.0	20.5	3.5	35.7	38.8	3.1	47.3	40.7	−6.6

[1] Change: 1981%-1971%

Table 15
Occupation Type by Size Category and by Sector, Canadian Urban System, 1981

	Size 1			Size 2			Size 3			Size 4			Size 5		
	PL	I	PN	PL	I	PN	PL	I	PN	PL	I	PN	PL	I	PN
PRI	28.3	19.3	52.4	12.5	9.2	78.3	9.6	8.4	82.0	9.9	7.6	82.5	8.3	8.2	83.5
MFG1	12.1	23.4	64.5	10.6	21.1	68.3	9.8	18.0	72.2	8.1	17.1	74.8	8.3	16.8	74.9
MFG2	17.9	21.4	60.7	15.7	17.8	66.5	15.4	15.7	68.9	13.3	15.3	71.4	11.9	14.7	73.4
MFG3	20.8	20.2	59.0	13.3	16.4	70.3	18.2	16.6	65.2	14.7	14.9	70.4	13.1	12.5	74.4
CONSTR	10.8	11.4	77.8	9.6	11.1	79.3	8.4	10.3	81.3	7.5	10.3	82.2	8.3	10.8	80.9
TRANS	10.1	28.4	61.5	7.3	21.7	71.0	7.9	18.3	73.8	6.4	15.9	77.7	6.3	16.2	77.5
COMMUN	25.0	54.3	20.7	24.3	54.1	21.6	20.4	53.6	26.0	17.8	54.3	27.9	20.0	52.9	27.1
UTIL	32.3	26.4	41.3	24.7	23.3	52.0	19.1	23.3	57.6	20.2	24.9	54.9	18.1	20.8	61.1
WHOLE	15.2	59.1	25.7	11.4	59.8	28.8	9.4	57.8	32.8	8.4	57.5	34.1	7.6	57.9	34.5
RETAIL	7.0	72.3	20.7	5.7	74.2	20.1	5.3	73.9	20.8	5.3	73.7	21.0	5.3	73.6	21.1
FIRE	21.2	75.7	3.1	19.9	77.0	3.1	17.5	79.4	3.1	17.8	78.8	3.4	18.9	78.6	2.5
NONPROF	68.8	26.9	4.3	67.7	27.3	5.0	68.3	27.2	4.5	68.8	26.4	4.8	68.8	26.4	4.8
CONSER	13.9	75.4	10.7	10.7	78.9	10.4	8.8	80.1	11.1	8.0	80.9	11.1	9.0	80.2	10.8
PRODSER	52.1	40.6	7.3	47.7	44.4	7.9	46.4	45.1	8.5	43.3	48.9	7.8	41.1	46.2	12.7
PUBLIC	35.3	53.0	11.7	30.3	55.1	14.6	30.3	54.4	15.3	26.6	56.5	16.9	22.5	60.3	17.2

Note: PL = Professional
I = Intermediate
PN = Production

Individual Urban Areas

Table 16 indicates the 1981 aggregate occupational structure for each of the 122 urban areas, as well as the direction of relative change over the period 1971-1981. Ottawa-Hull (32.4) exhibits the highest percentage of professional employment, followed by Rimouski (30.4), Quebec (30.4), Fredericton (29.2) and St. John's (29.1). The lowest level of professional employment is found in Oromocto (10.1) and Petawawa (12.1), followed by Leamington (13.3), Port Alberni (14.2) and Trenton (14.5). All urban areas show an increased percentage of professional employment over the period 1971-1981, with the exception of Sorel, Cobourg, and Red Deer.

The highest levels of intermediate employment are found in Oromocto (67.9), Petawawa (61.3) and Halifax (49.1), followed by Ottawa-Hull, Moncton, Regina, and Victoria, all with approximately 47 percent; Labrador City (26.0), Asbestos (29.4), Powell River (29.8) and Midland (30.7) have the lowest percentages of intermediate employment, followed by Leamington, Flin Flon, and Port Alberni, all with 31.7 percent. With the exception of 13 urban areas, all places show an increased percentage of intermediate employment from 1971 to 1981.

Production employment has the highest concentration in Labrador City (58.1), Leamington (54.9), Asbestos (54.3), Powell River (54.3), and Port Alberni (54.1), followed by Hawkesbury, Flin Flon, and Prince Rupert, all with approximately 50 percent. Ottawa-Hull (19.9), Oromocto (22.1), Rimouski (23.6), Quebec (24.2) and Halifax (24.0) show the lowest percentages of production employment. All urban areas decreased their percentage of production employment over the period 1971-1981 with the exception of Summerside, Oromocto, Petawawa, Flin Flon, and Red Deer.

Conclusion

The analyses performed in the previous sections give evidence of system-wide changes in economic structure over the period 1971-1981. In all regions and in all size categories the producer services, consumer services, and FIRE sectors are becoming increasingly important sources of employment, generally at the expense of the goods-producing sector, transportation and public administration. A regional shift in economic activity was evident: the Prairies and British Columbia grew at the expense of the Atlantic region, Quebec and Ontario. It is interesting to note that consumer services tended to grow more rapidly in the Atlantic region and Quebec, while producer services grew more

Table 16
Occupation Type, Canadian Urban Areas, 1981

	Prof (%)	71-81 Ch.	Inter (%)	71-81 Ch.	Prod (%)	71-81 Ch.
St. John's	29.1	6.8	44.1	1.8	26.8	−8.5
Carbonear	18.7	3.7	37.0	9.5	44.4	−13.2
Grand Falls	25.8	6.7	39.9	4.1	34.3	−10.8
Corner Brook	22.5	6.2	42.5	5.5	34.9	−11.7
Labrador City	15.8	2.7	26.0	4.9	58.1	−7.6
Charlottetown	28.2	5.6	40.7	1.3	31.1	−6.9
Summerside	18.6	3.2	47.3	−3.8	34.1	.6
Halifax	26.9	6.1	49.1	−.1	24.0	−6.0
Kentville	19.9	1.9	40.4	3.4	39.7	−5.3
Truro	18.6	3.5	39.8	2.9	41.6	−6.4
New Glasgow	18.1	3.3	36.5	.3	45.4	−3.6
Sydney	21.0	5.1	38.2	3.6	40.8	−8.7
Sydney Mines	21.1	7.0	33.9	1.7	45.0	−8.8
Moncton	23.0	6.2	47.5	1.4	29.4	−7.6
Saint John	23.2	5.1	43.9	2.1	32.9	−7.2
Oromocto	10.1	2.8	67.9	−7.3	22.1	4.5
Fredericton	29.2	7.2	44.9	1.9	25.8	−9.1

Table 16 (Cont'd)

	Prof (%)	71-81 Ch.	Inter (%)	71-81 Ch.	Prod (%)	71-81 Ch.
Bathurst	21.7	4.2	42.0	6.6	36.3	−10.8
Campbellton	27.5	4.1	41.8	4.8	30.7	−8.9
Edmundston	21.4	2.0	39.4	3.6	39.3	−5.6
Rimouski	30.4	6.7	46.0	4.0	23.6	−10.7
Riviere-du-Loup	28.5	7.9	40.8	3.4	30.7	−11.2
Baie-Comeau	21.9	4.5	37.4	6.3	40.7	−10.8
Chicoutimi-Jonquiere	26.2	5.0	37.1	4.3	36.7	−9.3
Dolbeau	22.7	6.0	36.6	6.4	40.7	−12.4
Sept-Iles	23.6	6.4	40.3	6.7	36.1	−13.1
Quebec	30.4	7.4	45.4	3.6	24.2	−10.9
Saint-Georges	25.8	4.0	38.1	4.7	36.1	−8.7
Thetford Mines	22.7	5.2	34.1	3.5	43.1	−8.8
Sherbrooke	28.8	4.7	39.1	3.2	32.2	−7.9
Magog	16.6	2.7	34.5	5.3	48.9	−8.0
Asbestos	16.4	2.4	29.4	7.0	54.3	−9.5
Victoriaville	22.1	4.4	38.7	4.0	39.2	−8.4
Trois-Rivieres	25.1	6.2	37.7	2.6	37.2	−8.8
Shawinigan	20.5	3.1	35.9	4.9	43.7	−8.0
La Tuque	20.9	2.4	35.3	4.6	43.8	−7.0
Drummondville	19.8	3.7	37.4	5.7	42.8	−9.5
Granby	17.7	3.7	36.8	3.0	45.5	−6.7
Saint-Hyacinthe	21.8	4.1	36.8	3.6	41.4	−7.7
Sorel	19.4	−.1	34.4	4.4	46.2	−4.3

Table 16 (Cont'd)

	Prof (%)	71-81 Ch.	Inter (%)	71-81 Ch.	Prod (%)	71-81 Ch.
Joliette	24.8	2.6	38.2	2.8	37.0	−5.3
Saint-Jean-Sur-Richelieu	20.0	4.4	41.7	2.7	38.3	−7.1
Montreal	25.5	5.0	42.1	2.2	32.3	−7.3
Salaberry-de-Valleyfield	18.0	2.6	36.3	4.7	45.7	−7.3
Lachute	19.2	4.6	34.0	3.1	46.8	−7.7
Saint-Jerome	19.2	1.4	40.7	7.4	40.1	−8.9
Val-d'Or	21.5	4.8	40.2	.4	38.4	−5.2
Rouyn	25.1	4.7	42.7	5.2	32.2	−9.9
Matane	25.0	5.2	44.6	5.7	30.4	−10.8
Montmagny	23.4	7.7	36.6	1.7	40.0	−9.4
Cowansville	19.3	4.5	35.2	3.8	45.5	−8.3
Alma	24.7	1.3	37.9	2.2	37.4	−3.5
Cornwall	19.8	2.3	39.2	5.6	41.0	−8.0
Hawkesbury	17.0	1.3	32.3	1.1	50.7	−2.4
Ottawa-Hull	32.4	6.1	47.6	2.3	19.9	−8.5
Smiths Falls	25.9	2.2	37.8	2.1	36.3	−4.3
Brockville	23.9	5.3	37.1	1.6	39.0	−7.0
Pembroke	19.6	1.3	39.6	−.9	40.8	−.4
Petawawa	12.1	3.5	61.3	−5.1	26.6	1.6
Kingston	26.5	2.7	43.6	3.2	29.9	−6.0
Belleville	22.7	4.5	42.0	2.4	35.2	−6.9
Trenton	14.5	2.1	45.1	3.0	40.5	−5.0
Cobourg	18.0	−.3	35.6	.9	46.4	−.7

Table 16 (Cont'd)

	Prof (%)	71-81 Ch.	Inter (%)	71-81 Ch.	Prod (%)	71-81 Ch.
Peterborough	22.0	2.7	41.9	3.4	36.1	−6.2
Lindsay	19.8	3.0	38.8	1.8	41.5	−4.8
Oshawa	20.6	3.7	39.0	2.3	40.4	−6.0
Toronto	25.2	5.4	43.8	1.5	31.0	−6.9
Hamilton	22.0	4.8	38.6	2.7	39.4	−7.5
St. Catharines	18.9	3.3	38.6	3.6	42.4	−6.9
Kitchener	20.4	4.6	38.3	3.2	41.3	−7.9
Brantford	19.2	4.1	37.3	1.8	43.5	−5.9
Guelph	25.2	4.2	37.1	1.9	37.6	−6.0
Fergus	21.2	3.3	36.5	2.9	42.3	−6.3
Stratford	17.9	1.8	39.9	4.0	42.3	−5.8
London	25.2	4.5	43.5	2.1	31.3	−6.6
Chatham	22.1	3.8	39.0	.3	38.9	−4.1
Leamington	13.3	3.3	31.7	4.7	54.9	−7.9
Windsor	21.3	4.5	40.1	2.5	38.6	−7.0
Sarnia	24.6	4.0	37.5	1.5	38.0	−5.5
Owen Sound	22.0	4.6	39.4	3.3	38.6	−7.9
Barrie	21.0	4.8	42.7	3.1	36.2	−7.9
Orillia	22.9	.9	43.0	5.1	34.1	−6.0
Midland	19.3	4.4	30.7	2.2	49.9	−6.6
North Bay	22.9	2.8	46.1	1.7	31.1	−4.5
Sudbury	20.9	5.8	39.2	9.8	39.8	−15.6
Haileybury	20.9	2.5	39.3	2.7	39.8	−5.2
Sault Ste. Marie	18.8	2.9	36.8	3.2	44.4	−6.1

Table 16 (Cont'd)

	Prof (%)	71-81 Ch.	Inter (%)	71-81 Ch.	Prod (%)	71-81 Ch.
Thunder Bay	21.5	3.6	38.9	1.5	39.7	−5.2
Kenora	21.6	6.0	41.9	5.9	36.5	−11.9
Newcastle	18.3	6.4	33.6	−.9	48.1	−5.5
Timmins	19.4	4.1	36.2	−.7	44.5	−3.4
Winnipeg	24.4	5.1	44.8	1.3	30.7	−6.4
Portage La Prairie	23.2	3.4	39.1	3.9	37.8	−7.2
Flin Flon	18.0	.6	31.7	−4.4	50.3	3.8
Thompson	22.0	7.4	33.5	9.7	44.5	−17.1
Brandon	24.9	4.2	46.7	2.9	28.4	−7.2
Regina	26.1	5.3	47.3	−1.0	26.6	−4.4
Moose Jaw	21.2	2.0	46.8	3.6	31.9	−5.6
Swift Current	20.1	.7	42.5	.9	37.5	−1.6
Saskatoon	26.9	4.1	44.1	.4	29.0	−4.5
North Battleford	25.6	3.9	40.5	.4	33.9	−4.3
Prince Albert	23.3	4.2	42.0	2.5	34.7	−6.6
Medicine Hat	16.7	2.2	38.4	4.7	44.8	−6.9
Calgary	27.7	6.0	42.9	−1.1	29.4	−5.0
Edmonton	25.2	4.8	42.6	.6	32.2	−5.5
Lethbridge	22.7	4.4	43.6	.7	33.7	−5.2
Red Deer	22.3	−1.3	43.2	.3	34.5	.9
Fort McMurray	20.9	3.6	33.2	4.0	45.9	−7.7

Table 16 (Cont'd)

	Prof (%)	71-81 Ch.	Inter (%)	71-81 Ch.	Prod (%)	71-81 Ch.
Trail	19.6	1.9	35.3	3.4	45.1	−5.4
Kelowna	19.4	5.2	41.3	3.6	39.4	−8.8
Vernon	18.6	5.0	40.9	4.0	40.5	−9.0
Kamloops	21.1	4.0	42.1	3.4	36.8	−7.5
Chilliwack	16.3	4.9	44.0	1.6	39.7	−6.4
Vancouver	24.2	6.1	44.6	1.7	31.2	−7.8
Victoria	25.5	7.4	47.2	−1.0	27.3	−6.4
Nanaimo	19.4	5.1	42.3	3.7	38.3	−8.8
Port Alberni	14.2	3.2	31.7	6.1	54.1	−9.3
Courtenay	16.9	4.8	44.0	−1.8	39.1	−2.9
Powell River	15.9	3.5	29.8	3.6	54.3	−7.2
Prince Rupert	17.6	5.6	32.4	−.6	50.1	−5.0
Terrace	17.9	3.5	32.6	3.7	49.5	−7.1
Prince George	19.5	4.0	41.5	2.5	39.0	−6.6

rapidly in the West. Ontario experienced rapid growth in both. Manufacturing activity declined most significantly in Quebec and Ontario. Certain regularities may also be observed in terms of urban size. The producer services and FIRE sectors tend to have a concentration that is directly proportional to size, while the concentration is inversely proportional to size in the case of the primary and manufacturing 1 sectors. A general shift in the level of economic activity has occurred away from size 2 (100,000-300,000) and size 5 (less than 30,000) urban areas and towards size 4 (30,000-50,000) areas. This shift is particularly pronounced in the high growth producer services, consumer services, and FIRE sectors.

Similar changes are occurring in occupation structure. All sectors have increased their proportion of professional employment, while most have suffered a reduction in production employment. Only about one-third of the Canadian urban system's employed labour force is engaged in production-type occupations. In the traditional goods-producing sectors, approximately 30 percent of employment is engaged in non-production work. Occupational structure does not vary significantly across regions, although it may be observed that the Atlantic region has the highest proportion of intermediate employment, Quebec the highest proportion of professional employment, and Ontario the highest proportion of production employment. There is a high degree of occupation type regularity across size categories: professional and intermediate employment concentrations vary in direct proportion to urban size; production employment varies inversely with urban size.

The types of empirical findings that have just been summarized have significant and far-reaching implications for the Canadian economic system. While space does not permit a detailed discussion of these implications, several of the principal issues can be raised. *First*, what is the potential role of service activities in promoting regional development? In the Canadian context, there has been recent debate on this question (Economic Council of Canada, 1984; McRae, 1985; Swan, 1985; Mansell, 1985), especially with reference to the Western provinces. McRae (1985), for example, has posited four explanations for the growth of service sector employment: (1) shifts in consumption preferences; (2) shifts away from in-house production of services to specialized firms; (3) lower productivity than the goods-producing sector; (4) lower and more flexible wages due to the disproportionate number of small and medium-sized firms. The implication is that the rise of the service sector, and its impact upon the economy, is more apparent than real. The problem with approaches such as this, however, is a fundamental ecological fallacy: a homogeneous "service sector" does not exist. Rather, it is composed of approximately six very different elements, each characterized by very different levels of development potential (Stanback *et al.*, 1981). It is clear that higher order services, such as producer services and FIRE, have the greatest potential for stimulating development. Attention should thus be focused upon opportunities for interregional and international trade in these services, and upon their ability to reinforce, to attract, and to generate economic activity in other sectors.

Second, what will be the effect upon regional development of the changing geography of economic activity? It is clear that the higher-order services are shifting to larger urban centres; to what extent is a "filtering down" likely to occur? This is a crucial question, given the evidence that such activities are able to attract and engender complementary forms of economic activity. Conversely, manufacturing seems to be shifting toward smaller places, primarily due to changes in the economics of those factor inputs which bear most heavily on the location of manufacturing facilities: transportation, technology, land, and labour, and specifically the routinization and simplification of production processes, and the need to avoid high blue collar labour costs. While declining sectors might create jobs in the short-term, the long-term prospects for growth and development are not bright. Thus, one might ask whether the ultimate effect of on-going structural changes in the space-economy will be the continuing regional polarization of Canada.

Third, sectoral shifts in the Canadian economy also entail shifts in the demand for labour. New and higher levels of skills are required to compete in many segments of the labour market. There is a strong possibility not only that a major portion of the labour force will be severely disadvantaged by these developments, but also that the labour market will become further dichotomized. In the "service sector", for example, one finds part-time, unrewarding, and poorly paid positions in retail and consumer services juxtaposed with higher-level employment in producer services and FIRE.

In sum, the scope of regional development policy needs to be expanded to include these new sectoral, spatial, and occupational realities. In particular, the various elements of service activity need to be explicitly included in policy initiatives, which up to now have addressed only the goods-producing sector. The critical elements of a development policy for an economy in which high-order services play a major role are largely removed from older approaches involving incentives and infrastructure for industrial firms. Such a development policy may need to be aimed, at least in part, at improving the skills and the environment of the workforce. Finally, there is the question of the ability of government to effectively influence the location of high-order services. That is to say, to what extent can (or should) the government effectively induce the decentralization of these activities to smaller centres and to peripheral regions in the interests of regional equity?

Note

1. A negative sign does not indicate decline in level of employment but, rather, that employment grew less rapidly than in other regions; i.e., that there was a net shift in growth away from the region.

Appendix A
Identification of Urbanized Areas *

Urban Area	1981 Population (000s)
Newfoundland	
St. John's (CMA)	154.8
Carbonear	13.0
Grand Falls	14.5
Corner Brook	32.3
Labrador City	14.7
Total (40.4% of 567.7)	229.3
Prince Edward Island	
Charlottetown	45.0
Summerside	15.0
Total (49.0% of 122.5)	60.0
Nova Scotia	
Halifax (CMA)	277.7
Kentville	20.9
Truro	39.8
New Glasgow	39.4
Sydney	87.5
Sydney Mines	35.4
Total (59.1% of 847.4)	500.7
New Brunswick	
Moncton	98.4
Saint John (CMA)	114.1
Oromocto	13.7
Fredericton	64.4
Bathurst	24.3
Campbellton	15.5
Edmunston	21.9
Total (50.6% of 696.4)	352.3

Urban Area	1981 Population (000s)
Quebec	
Rimouski	37.5
Riviere-du-Loup	20.5
Baie-Comeau	29.5
Chicoutimi-Jonquiere (CMA)	135.2
Dolbeau	15.5
Sept-Iles	30.1
Quebec (CMA)	576.1
Saint-Georges	18.8
Thetford Mines	34.7
Sherbrooke	117.3
Magog	18.1
Asbestos	14.2
Victoriaville	35.9
Trois-Rivieres (CMA)	111.5
Shawinigan	62.7
LaTuque	13.6
Drummondville	54.7
Granby	45.7
Saint-Hyacinthe	47.4
Sorel	47.0
Joliette	34.5
Saint-Jean-Sur-Richelieu	60.7
Montreal (CMA)	2,828.3
Salaberry-de-Valleyfield	39.5
Lachute	18.1
Saint-Jerome	43.8
Val-d'Or	23.5
Rouyn	28.6
Alma (Mun.)	26.3
Montmagny	12.4
Matane	13.6
Cowansville	12.2
Total (71.6% of 6,438.4)	4,607.5

Ontario

Cornwall	53.4
Hawkesbury	11.3
Ottawa-Hull (CMA)	718.0
Smiths Falls	15.0
Brockville	35.7
Pembroke	22.2
Petawawa	13.2
Kingston	115.0
Belleville	46.6
Trenton	39.1
Cobourg	20.2
Peterborough	85.7
Lindsay	16.8
Oshawa (CMA)	154.2
Toronto (CMA)	2,998.9
Hamilton (CMA)	542.1
St.Catherines-Niagara	304.4
Kitchener (CMA)	287.8
Brantford	88.3
Guelph	78.5
Fergus	12.1
Stratford	28.1
London (CMA)	283.7
Chatham	47.2
Leamington	21.4
Windsor (CMA)	246.1
Sarnia	84.0
Owen Sound	27.3
Barrie	61.3
Orillia	30.9
Midland	33.9
North Bay	57.1
Sudbury (CMA)	149.9
Sault Ste. Marie	87.0
Thunder Bay (CMA)	121.4
Kenora	15.5
Timmins (Mun.)	46.1
Newcastle (Mun.)	32.2
Haileybury	13.2
Total (81.7% of 8,625.1)	7,044.6

Manitoba

Winnipeg (CMA)	584.8
Portage La Prairie	20.7
Flin Flon	9.9
Thompson	14.3
Brandon (Mun.)	36.2
Total (64.9% of 1,026.2)	665.9

Saskatchewan

Regina (CMA)	164.3
Moose Jaw	36.1
Swift Current	16.6
Saskatoon (CMA)	154.2
North Battleford	18.7
Prince Albert	38.3
Total (44.2% of 968.3)	428.2

Alberta

Medicine Hat	49.6
Calgary (CMA)	592.7
Edmonton (CMA)	657.1
Lethbridge (Mun.)	54.1
Red Deer (Mun.)	46.4
Fort McMurray (Mun.)	31.0
Total (64.0% of 2,237.7)	1,430.9

British Columbia		
Trail	22.9	
Kelowna	77.5	
Vernon	42.2	
Kamloops	65.0	
Chilliwack	41.5	
Vancouver (CMA)	1,268.2	
Victoria (CMA)	233.5	
Nanaimo	57.7	
Port Alberni	32.6	
Courtenay	35.2	
Powell River	19.4	
Prince Rupert	18.4	
Terrace	32.5	
Prince George	67.6	
Toital (73.4% of 2,744.5)	2,014.2	
Grand Total	17,333.6	(71.2% of 24,343.2)

* All places are Census Agglomerations, unless identified as a Census Metropolitan Area (CMA) or as a Municipal unit (Mun.)

References

Economic Council of Canada, 1984. *Western Transition*. Ottawa: Minister of Supply and Services.

Gershuny, J.I. and I.D. Miles, 1983. *The New Service Economy*. London: Frances Pinter.

Mansell, Robert L., 1981. "The Service Sector and Western Economic Growth", *Canadian Public Policy*, 11, Supplement: 354-360.

Martin, Fernand, 1976. *Regional Aspects of the Evolution of Canadian Employment*. Ottawa: Economic Council of Canada.

McRae, James J., 1985. "Can Growth in the Service Sector Rescue Western Canada?", *Canadian Public Policy* 11, Supplement: 351-353.

Noyelle, T.J. and T.M. Stanback, 1984. *The Economic Transformation of American Cities*. Totowa, N.J.: Rowman & Allanheld.

Stanback, T.M., 1979. *Understanding the Service Economy*. Baltimore: The Johns Hopkins University Press.

Stanback, T.M., P.J. Bearse, T.J. Noyelle, and R.A. Karasek, 1981. *Services: The New Economy*. Totowa, N.J.: Allanheld, Osmun & Co.

Statistics Canada, 1974. *Growth Patterns in Manufacturing Employment, 1961-70*. Catalogue 31-518. Ottawa: Minister of Supply and Services.

Swan, Neil M., 1985. "The Service Sector: Engine of Growth?", *Canadian Public Policy*, 11, Supplement: 344-350.

Chapter 4:

Regional Development Policies: Context and Consequences

N. Harvey Lithwick

Introduction

This paper is based on a larger study prepared for the Royal Commission on the Economic Union and Development Prospects for Canada. A key link between these two concerns, the "economic union" and "development prospects", is the process of regional economic development. The federal government has, over the past forty years, attempted to influence that process in order to achieve one or the other, and occasionally both of these policy goals. This paper is an attempt to evaluate the efficacy of those efforts. It does so not by a detailed assessment of each program launched, although this is an important aspect of any evaluation. Fortunately, a substantial body of literature of this type has been produced, and has been drawn upon where appropriate. Rather, our concern is to provide a broader framework for evaluating federal regional policy. Such an approach is based on the belief that policies chosen, and their consequences, must be understood in the light of the interaction between evolving conceptions of the issues, and shifting political forces. Although not always apparent, these underlying processes can be crucial determinants of policy choices.

It is useful to break the 40 year postwar era into six subperiods as follows:

1. Pre-1957
2. The Diefenbaker period: 1957-1963
3. The Pearson era: 1963-1968
4. DREE-I: 1968-1973
5. DREE-II: 1973-1981
6. Reorganization: 1981-

These subperiods coincide with distinct political regimes, since each regime attempted to distinguish itself from its predecessor, and this was reflected in no small measure in their respective approaches to regional policy. In order to assist the reader, we have included as an Appendix some summary data on the economic milieu for each of the periods identified. Table A1 provides information on the national economy's performance in areas such as growth, unemployment and inflation. Table A2 provides several indicators of regional disparities at the beginning of each policy phase.

The Emergence of the Regional Disparity Issue: The Postwar Decade, 1947-1957

Regional disparities have been part of the Canadian landscape at least since Confederation. Until the second world war, however, policies were directed to unique problems in particular regions, particularly the Maritimes and the Prairies. The decade following the end of World War II was concerned primarily with national issues such as postwar reconstruction and economic development. But while the federal-provincial conflicts that were to characterize subsequent periods were subdued, the evolution of social and economic policy in this decade helped shape much of the reality and many of the perceptions of the regional development issue in Canada.

Policy Context

Although until the mid-1950s the dominant policy concern was reconstruction, the regional issue was not recognized as part of that problem, or of its solution. This is somewhat surprising since the Great Depression had had such a devastating impact on the economies of the provinces outside central Canada. So serious were these consequences that in 1940, the Rowell-Sirois Royal Commission on Dominion-Provincial Relations had recommended massive restructuring of federal-provincial fiscal arrangements in order to ensure "fiscal equity,"–i.e., that Canadians would obtain similar levels of public services wherever they lived. The exigencies of the War permitted the Dominion government to begin implementing selected aspects of the Report regardless of opposition by Quebec and Alberta. The key element was the Tax Rental Scheme, whereby Ottawa forcefully took over the tax fields and agreed to pay the provinces an equivalent amount for the duration of the war. Very soon thereafter there emerged from Ottawa crucial embryonic expenditure programs, including unemployment insurance, family allowance, national housing and the Farm Improvement Loans Act.

With the end of the war, the clear shift of power to Ottawa had to be reconciled with the provinces, and a Dominion-

Provincial Conference was held in 1945. The key document outlining the Dominion's philosophy and strategy was *The Proposals of the Government of Canada,* one unique document in this package being the *White Paper on Employment and Income.* The central issue in these documents was the urgent need for a massive national effort at economic stabilization. The rationale was provided in the theoretical work of Keynes, which demonstrated that economic stabilization could in fact be improved through major deficit financing (MacIntosh, 1965). The political consequence was a powerful Dominion claim to maintain its preeminent fiscal position. This would ensure a coherent macroeconomic policy, unimpeded by provinces acting against this obvious national interest, together with a rationalized and efficient tax collection system. In exchange, the provinces would receive unconditional grants, replacing earlier conditional grants, and hence preserving their spending autonomy.

Policy Content

The approach to economic stabilization was quite revolutionary. Scott Gordon (1965) has argued:

> What took place in the 1930s was the development of the view that the state should not only succor the unemployed, but that it should cure unemployment; that it should strive to eradicate the disease as well as assisting its victims.

This view stressed that "compensation" is an inadequate policy response. Governments had to understand problems, and assume the responsibility for solving them. The Dominion budgets of the mid- and late-1940s were sharply expansionary, with particular emphasis on tax cuts. As late as 1955, most budgets remained strongly Keynesian in nature.

Policy Assessment

Until 1956, the results were reassuring. Keynesian policy provided substantial stability, and the public sector investments undertaken stimulated the transformation of the Canadian economy itself. These efforts were largely in the field of public infrastructure building, including projects such as the Trans Canada Highway system, airport development, telecommunications, and initiation of the Trans Canada Pipeline. Links with the private sector were forged in the area of resource development, much of which was financed by American capital. Branch-plant manufacturing also was promoted in this period. As a result, economic growth was rapid. Since all regions shared in this prosperity, the regional issue did not surface as a priority policy concern. Regional development was seen as a natural adjunct of national development.

Toward the end of the period, however, latent regional concerns began to emerge. Much of this can be attributed to the sharp recession after 1956, which had a severe impact on the peripheral regions. A second development that reinforced regional discontent was the publication of the first quantitative examination of the issue of regional disparities: a study for the Gordon Royal Commission on Canada's Economic Prospects by R.D. Howland, entitled ***Some Regional Aspects of Canada's Economic Development*** (1957). He defined "the regional problem" more broadly than hitherto. For him, the regional problem was the persistence of a gap between the richer and poorer provinces. Merely growing as quickly as the richer provinces was not seen as sufficient improvement for the poorer areas. The greater instability of the peripheral provinces was attributed to their resource dependency, and the strength of the core to its modern financial and industrial structure.

By identifying Canada's regional problem in a unique way—as gaps in key economic attributes among provinces—this work had a profound impact on subsequent thinking about regional policy: that the problem was the gap, not its causes; and that provinces were the units upon which policy was to be focused. The former was natural because regional economics had no well developed theoretical core to explain what was being observed. This would lead to a heavy emphasis on compensatory policies in most subsequent periods. The latter focus, on provinces, was natural in a federal state, but was also to prove increasingly problematical in the 1970s and 1980s. In fact, this emphasis was reinforced by the introduction, in 1957, of the first federal-provincial tax sharing agreement which entrenched the concept of equalization. Equalization payments provided a more automatic and elastic source of revenue for the provinces than the earlier per capita grants, and contributed to the growing power and autonomy of the provinces. The inevitable consequence was the emergence of the provinces as key players in regional economic policy.

Nevertheless, during most of the period 1947-1957, the provinces' role as regional advocates was restrained due to the economic and political dominance of the federal Liberal government. The severe post-1956 recession, however, created a climate of disenchantment with the hitherto unquestioned economic management capabilities of that government. This was particularly so in the case of the resource-based peripheral provinces. Relief was sought from a new party and a new leader, which appealed to the emerging sense of alienation, powerlessness, and economic despair in those regions.

The Diefenbaker Era 1957-1963: A Voice from the Regions

The election of 1957 moved regional economic development concerns to centre stage. Certain policy elements of the earlier period continued into this era. Most important among these was the 1957 renewal for five years of the federal-provincial tax abatement agreement which entrenched the concept of equalization payments. It was clear that this instrument eased problems, but that it did not address their roots. The problem of shifting focus, from compensating poorer provinces in the periphery of Canada to stimulating their development, was a major election issue for the Conservatives and their leader, John Diefenbaker.

Context

The election of the Conservatives in 1957 provided an environment and opportunity for new initiatives with regard to regional development policy. The fact that the sharply increased severity of regional problems at that time was attributable in large part to the recession was not addressed. As a result, solutions both to the regional and to the national economic problems of the period were to stress developmental, as opposed to anticyclical, efforts. This flawed diagnosis was to prove costly both to the regions, and to the Conservative party itself.

The conceptual basis for this emphasis paradoxically lay at least in part with a Liberal initiative. The Gordon Royal Commission Report, completed in 1957, was particularly critical of Canada's continued dependence on foreign (U.S.) ownership, which it viewed as a cause of excessive concentration on resource exports as the leading edge of Canada's development pattern. In order to overcome this dependence, Gordon had stressed the technological diversification and modernization of the Canadian economy with greater Canadian ownership. It was felt that Canada's staple dependence was a major cause of the severity of the 1957-1961 slump. While Diefenbaker was disinclined to endorse anything produced by a Liberal appointee, especially in the 1957-58 period of minority government, by 1958 he would propose elements of a national development policy that were not significantly different from Gordon's proposals.

The Northern Vision and Development Policy

Diefenbaker's integrated vision of regional and national development was articulated during the 1958 election. On Feb. 12, 1958, he spoke for the first time of his "vision" for a new Canada, a Canada of the North (Newman, 1973: 69). Conceived by Alvin Hamilton and his economic advisor, Dr. Merrill Menzies, this vision captured the public imagination. The Conservative party was returned with a majority unprecedented in Canadian history. Turning this vision into policy proved to be much more difficult. The severity and prolongation of the recession produced a series of crises with regard to economic stabilization that dominated much of the government's attention. In addition, the Diefenbaker style of leadership prevented coherent policy development. Deep distrust of the bureaucracy further inhibited policy planning (Careless, 1977: 37).

One program, targetted at relatively small "regions" was rather innovative. It was intended to deal with seasonal unemployment, and entailed a federal-provincial shared-cost winter works program for 1958-59 and 1959-60. Since the cyclical slump was so severe, these programs could not have a significant impact on the problem, but they did demonstrate that locally targetted programs were feasible. This departure from focusing all regional policies on the provinces was to remain a relatively isolated event until the 1980s. More directly in the development field was an attempt to upgrade human capital. The program, called the Technical and Vocational Training Assistance Act (TVTA) provided the provinces with one billion dollars over a six year period on a cost shared basis. This form of transfer had an unanticipated effect, in that, because the poorer provinces had difficulty financing their share, the program "probably heightened the disparity between rich and poor (provinces)" (Careless, 1977: 60).

In 1962 the government formed the Atlantic Development Board (ADB) as a purely advisory body with respect to the economic problems of Atlantic Canada. But the most innovative of the regional development programs were the products of the fertile collaboration between Alvin Hamilton and Menzies. These included Roads to Resources and the Agricultural Rural Development Act (ARDA). As Minister of Natural Resources and Northern Development Mr. Hamilton initiated the creation of the National Energy Board, accelerated the technical survey of Canada, inaugurated the Resources for Tomorrow Conference, and began negotiations with each of the provinces for federally-provincially funded resource roads. Agreements for 4,000 miles of roads in nine provinces were signed by 1960, at a total cost to the federal government of $145 million. The government also committed itself to $100 million in expenditures on 2,200 miles of roads north of the 60th parallel.

Whether or not the program would ultimately have worked is impossible to assess. The initiative appeared to be entirely with Mr. Hamilton, who was transferred from the Northern Affairs portfolio just as the program was achieving momentum. Efforts to secure additional mineral processing in Canada were not pursued, and few if any mines were therefore opened in response to the road building effort. As a result of his move to the Department of Agriculture, Hamilton, again with Menzies' help, shifted attention to the rural sector. ARDA was created in 1961 to deal with the severe problem of rural poverty. The intent was to avoid forcing marginal farmers off the land. But the idea once again fell short in its implementation, only two-thirds of the initial $50 million was spent because the poorer provinces found it difficult to meet the 50/50 matching requirement, and the program lacked clear focus and direction (Brewis, 1969: 108-113).

Assessment

Despite interest in regional development as a national issue, the Diefenbaker regime was unable to come to grips with it in an effective manner. In part, this reflected his own personality, having sensitivity to political needs yet weak in organization and foresight. In part, this also was due to a faulty diagnosis of the problem. The government attempted to solve what were essentially short-run cyclical problems with long-run, economic development policies. Nor was there sufficient clarity as to the relationship between national and regional development goals. It was accepted as an article of faith by this government of outsiders that what was good for the periphery was good for Canada. In structural terms, this meant that development would necessarily be agriculture and resource led. The role of industrial policy in national economic development was largely ignored.

Nevertheless, the regional development implications were of paramount importance. For the first time, explicit policies to assist the deprived regions had been advanced. Perhaps the most significant consequence of Diefenbaker's government was to clearly define regional development as a federal-provincial issue. His personal empathy for the peripheral regions of Canada and the weakness of his own government, relative to those of the provinces, ensured that they would have a significant say in regional development policies.[1] Moreover, this was viewed as a positive development. Thus, Roads to Resources and ARDA were to constitute crucial prototypes for the co-operative federalism framework that would characterize the Pearson era.

The net impact of these initiatives, flawed as they were in their execution, and introduced in a period of economic instability, proved to be modest at best. Regional disparities were not reduced, and in the 1963 election, the Liberals were returned to power.

The Pearson Era 1963-1968: The Politicians versus The Planners

The return of the Liberals in 1963 did not entail a return to the style of government they enjoyed prior to 1957. Throughout this period, the Liberals had a minority government. In addition, the relative fiscal power of the provinces had increased significantly.[2] The economic climate had improved, however, as the economy underwent a powerful recovery until 1966. This created an environment in which attention could turn from stabilization and national development to other concerns, and the dominant concern that emerged in this era was that of social policy, focussing specifically on the problem of poverty. Regional development policy as such moved to the background, although important improvements were made to the rather haphazard initiatives of the Diefenbaker government.

The Setting

The recession of 1957-1961 had demonstrated once again the vulnerability of the poorer peripheral regions to downturns in the national economy. The post-1961 expansion saw the widened regional disparities of the recession narrow again. But improved macroeconomic stabilization was not stressed as the best way to deal with regional problems of unemployment and low incomes; rather, they were interpreted to be intrinsic aspects of the poverty problem. This led to demands by the reform wing of the Liberal party, and its NDP coalition partner, for a broad range of social programs that would shield the poor from the costs of future recessions.

This philosophy of compensatory policy was to have major long-term consequences. It led to a fundamental redefinition of the regional disparities issue, and fostered a spate of regional policies that were likely to inhibit rather than promote regional development. The initial thinking on this approach was outlined in a 1960 paper by Pearson's assistant, Tom Kent (1962). The program included policies clearly within the provinces' domain, such as medicare and an old age pension plan. But the provinces had increased their fiscal capacity, so that his social policy goals required Mr. Pearson to continue with, and indeed expand upon, the process of co-operative federalism. Such an approach was crucial in dealing with the Province of Quebec. The new Lesage administration believed the French-Canadian community could thrive only with strong provincial intervention in Quebec's social and economic affairs. Its resolute resistance to federal intrusions into its jurisdiction forced considerable federal compromise on policy issues.

This heightened political sensitivity to provincial interests was not congenial to the ambitious plans of Ottawa's leading bureaucrats. In order to implement their aggressive social policy agenda, they required a substantial recentralization of economic and political power into federal hands (Careless, 1977: 127-8). Finally, the minority status of the Liberal government restrained them from pursuing policies with long-term benefits, especially if they also entailed short-term costs. And since most development policies have precisely these characteristics, the political advantages of a social policy with a compensatory orientation were bound to determine the course of regional policy.

Programs and Policies: 1963-1968

The Liberals inherited both ARDA and the Atlantic Development Board (ADB) from the previous Diefenbaker administration. The ADB was required to prepare a comprehensive plan for the promotion of economic growth in the Atlantic region. It could also, subject to Cabinet approval, enter into agreements with private and public agencies for regional development programs for which adequate financing was unavailable. In fact, most expenditures were for social infrastructure projects. Three years later, the $100 million budgeted for the ADB was spent and no plan was in place (Careless, 1977: 118). Given the lack of planning involved in ADB expenditures, it is not surprising that the Board failed to consider in its programs the differences in economic structure between the Atlantic provinces. Nova Scotia and New Brunswick were much more industrialized than were Newfoundland and Prince Edward Island, which were more clearly resource-dependent economies. Furthermore, the provinces traded more with other regions than with each other; consequently, social infrastructure projects that did not recognize this orientation, and most did not, were bound to have little impact (Brewis, 1969: 169-178).

The ARDA program as developed by the Conservatives was a modest, heavily research-oriented effort. Under new agreements signed in 1965, the focus of the programs switched from agricultural assistance to regional development, and an additional $125 million was allocated to the programs over a five year period. This shift in emphasis towards a planned approach to regional development was most evident in the creation by the federal government of the Fund for Rural Economic Development (FRED) in 1966. FRED was to implement both a rural development and a rural adjustment strategy. The rural development strategy, derived from growth-pole theories, involved the development of comprehensive, long-range rural assistance programs in areas deemed to have economic development potential. The rural adjustment strategy involved providing education, retraining, and manpower mobility grants in areas deemed to lack economic potential (Green, 1974: 336).

A second major initiative was directed at expanding the industrial base of regions. The Area Development Agency (ADA) was created in 1963 to co-ordinate assistance within specific regions, although it turned out to be little more than a granting agency to attract industry to areas of high unemployment. Originally stressing tax-exemption programs, emphasis shifted in 1967 to cash grants to improve the liquidity position of potential investors. The overall impact of ADA was modest and it failed to achieve the goals originally set for it (Brewis, 1969: 169). Nevertheless, an important strategic approach was launched by the Agency that would influence subsequent policy approaches. It involved the identification of "designated areas." These were selected from the local office areas of the National Employment Service, and the criteria for being designated were high unemployment rates and slow growth rates, with direct grants as a key policy instrument.

Finally, the federal government replaced the TVTA with the Adult Occupational Training Act (OTA), which, unlike the TVTA, was to be administered solely by the federal government. An implicit objective of the Act was occupational and geographic mobility to deal with structural unemployment. Mobility incentives were not introduced, however, as Ottawa did not want to touch what was and remains a politically sensitive issue in the poorer provinces. The program addressed the problem of spatial disparities by channeling twice the per capita expenditures to the Atlantic provinces than were channeled to the wealthier provinces.

Assessment and Summary

The Pearson era marked a period of rapidly expanding federal presence in the regional policy field. Programs such as ARDA and the ADA became increasingly rationalized, while later programs such as FRED and the OTA developed a more rational format from the beginning. But while the programs were more rational, they still lacked an overall, consistent strategic framework. The federal relationship with the provinces was similarly unresolved. Despite Pearson's commitment to "cooperative federalism", his bureaucracy had fought to maintain and expand federal control in an area that lay clearly within the jurisdiction of the provinces. This was particularly so with regard to the wide range of social initiatives launched under his aegis, from health care to pensions. Transfers, to persons and to governments, in fact constituted the dominant activity of this period. The result was that by 1968, no real change in *underlying* regional disparities (i.e., excluding the effect of transfers) had occurred. The compensatory transfers had closed the gap in personal incomes,[3] but at the cost of increasing the dependency of the poorer provinces on Ottawa's generosity. Regional development, though much improved in conception and somewhat improved in program delivery, remained a secondary issue.

DREE: The Early Years, 1968-1973

With the election of Pierre Trudeau, a radical change in regional policy was to be expected. Trudeau believed strongly that Canada was threatened by the excessive devolution of fiscal and hence political power to the provinces.[4] The deteriorating situation in Quebec was merely the most visible symptom of the consequences of this erosion of federal power. Clearly a "rational" regional policy could play a key role in reasserting federal power vis-à-vis the provinces; and the instrument for delivering this policy was to be the new Department of Regional Economic Expansion (DREE).

The Setting

The economy continued to prosper, with minor cyclical swings, throughout the early years of the Trudeau regime. The problem areas that persisted could be handled by the social safety nets erected by Pearson. This gave Trudeau the opportunity to shape other goals such as national unity and the "Just Society." The two issues were seen to be linked, and intrinsically related to the regional question. Trudeau had argued:

> If the under-development of the Atlantic Provinces is not corrected – not by charity or subsidies, but by helping them become areas of economic growth – then the unity of the country is as surely destroyed as it would be by the French-English confrontation.[5]

DREE's Approach

Prior to DREE's formation there had been a consensus in the federal Cabinet that the then current regional development programs, such as the PFRA, ARDA and FRED, suffered from a serious lack of co-ordination and an inordinate appetite for government spending (Brewis, 1974: 316). Under DREE, the ADB, ADA and FRED were to be brought under one department. All agreements signed under the earlier programs were to be honoured. The federal government planned to play a much more proactive role in regional development. DREE was to focus upon jobs, the provision of infrastructure, and public works. The new pre-packaged, pre-financed approach of Ottawa meant that the provinces became increasingly recipients of, rather than partners in, federal expenditure decisions (Careless, 1977: 89).

The DREE approach was to involve the development of "Social Areas" (SAs). The concept was based upon growth-pole theory, which posited that "growth points" of economic activity could be developed that would spread the benefits of their expansion over a wider hinterland. The theory bridged regional economics and regional policy and had shaped policy initiatives in a number of European countries. In DREE's case, little consideration was given to how a theory designed to explain the growth of cities could be applied to primarily rural Atlantic Canada.[6]

Besides making social infrastructure available, DREE designed the new Regional Development Industrial Assistance program (RDIA). The program provided special industrial assistance for areas (5,000 or more square miles in each province) that suffered from depressed economic conditions but could sustain economic growth. Under the program, qualified entrepreneurs could receive assistance for the expansion and modernization of existing plants and for establishing new facilities. Excluded were natural resource activities which would reinforce the existing industrial mix and which required a high capital cost per job created. In order to implement its development plans the federal government devoted one-third of DREE's expenditures in its early years on social infrastructure – roads services and structures. Over time, more and more communities became eligible, reducing the agglomerative power of any one community.

The RDIA program could not direct the industries it assisted to the Special Areas. In fact, between 1969 and 1975 designated growth poles within the Atlantic region as a whole received a smaller percentage of manufacturing employment than did other communities. Further, most industries attracted were of the "footloose" type, offering few backward and forward linkages within the region (Hayter and Storey, 1979).

Two issues had led to a downplaying of industrial incentives, particularly in the Maritimes. One was the apparently sincere belief that infrastructure could and should lead to development. The second and vastly more important factor was the growing turmoil in Quebec which led Ottawa to divert major policy efforts to try to forestall the separatist movement. This is most clearly seen in the allocation of DREE funding. In 1969-70, fifty-one percent went to Atlantic Canada and twelve percent to Quebec. By 1973-74, the proportions were thirty-eight and thirty-nine percent, respectively. The absolute amount spent in Atlantic Canada actually declined from 1970 to 1974 (DREE, 1980: 33).

The Policy Review

An internal policy review of the Department's activities, from 1971 to 1973, led to the conclusion that the Department's programs, and particularly RDIA, had been moderately successful in alleviating regional disparities.[7] The review argued that the regional development problem was multidimensional; no federal agency, including DREE, could co-ordinate it alone. Moreover, intergovernmental co-operation was required, as well as the involvement of the private sector (Pillai and Francis, 1972). The report both indicated and glossed over some of the problems with DREE. In the early years of DREE the gap in the rate of unemployment between Atlantic Canada and the rest of Canada did decrease. But the extent to which DREE was responsible for this is unclear. There was also a lack of solid evaluation of the effectiveness of the SAs and social infrastructure programs, although one study noted that on balance federal transfer payments would have been more helpful (Gillespie and Kerr, 1977).

A great deal of attention was devoted to the study of the effectiveness of the RDIA program with somewhat more critical conclusions. DREE, using a questionnaire to determine the users' sense of need for the grant, and the export orientation of the industries involved, found that 80 percent of these industries would not have located in the region without the grant. A study by the Atlantic Provinces Economic Council (1971) reached similar conclusions. Springate (1973), on the other hand, based on a sample of interviews, found that the program influenced only about one-third of its recipients' locational choice. Gillespie and Kerr (1977) argued that the correct figure is between zero and forty-eight percent. More micro-level analyses of RDIA proved to be still more damaging, as academic economists could find few redeeming features in the program.[8] But even if its program evaluations were debatable, there was agreement on one point: DREE's rational problem-centered approach and the bureaucratic style that went with it had made co-operation with other provinces more difficult. The provinces desired greater autonomy, if possible with federal fiscal support. Without some rethinking of its highly unilateralist approach, DREE was bound to run headlong into provincial resistance and resulting program inefficiency.

DREE: The GDA Approach, 1973-1981

The period 1968-1973 had been one of rapid growth, and real income disparities had been moderated. But simultaneously unemployment and inflation had risen to historically high levels, and this had particularly severe impacts upon the peripheral regions. Hence the expectations that the creation of DREE had fueled, that finally disparities would be dealt with, were being frustrated. Pressures for more and better regional policies were bound to increase at a time when the world was on the brink of a major economic crisis precipitated by the rise in the price of oil.

The Setting

The oil shock of October 1973 plunged Canada into a new kind of economic stagnation. Real per capita income and productivity grew at negligible rates while inflation soared, as did unemployment. A major consequence was the serious fiscal difficulties into which all governments (federal and provincial, with the exception of energy rich Alberta and Saskatchewan) were plunged. Expansionary budgets up to 1975, the oil compensation program, and the declining tax base led to rapidly escalating federal deficits[9] and a difficult period for launching new regional policy initiatives. In addition, the 1972 federal election had produced a minority Liberal government that was weak in the Maritimes and in Western Canada. It was believed that the previous authoritarian approach to regional development by DREE had contributed considerably to the growing rift between Ottawa and the peripheral regions (French, 1980: 4).

The General Development Agreements (GDAs)

The new "multidimensional approach" proposed in the DREE evaluation appeared to provide the kind of framework that could help ease federal-provincial tensions, while preserving Ottawa's visibility in the regional policy field. Two elements were required: greater interdepartmental control at the federal level; and cooperation with each province in order to define both its unique development opportunities and a set of programs to realize these opportunities. The arrangements were to be set out in general framework plans called GDAs.

In order to implement the GDAs, joint management committees comprised of provincial bureaucrats and officials from the provincial DREE offices were established. The committees had the power to develop new projects, and were the final decision making bodies reviewing annual expenditures, budgets and programs. The actual programs themselves were run by the provinces. As part of its reaching out to the provinces, DREE shifted a significant portion of its staff to the regions.[10] The GDA agreements were up to 90 percent funded by the federal government, with the remainder coming from the provinces.

Evaluation

The new GDAs restored much of the initiative for regional policy to the provinces, and shifted the emphasis to a clear region-wide developmental orientation. But the focus on provinces meant that regional development policy was really provincial development policy. In addition, the stagnation of the economy had left resources as virtually the only growth sector in the economy, a sector over which provinces had the greatest control. A new impetus was given to an old phenomenon called "province-building" (Stevenson, 1981). Using federal funding whenever possible, as well as private sector initiatives, the goal was to guide and accelerate the development of the province as a quasi-autonomous economic and political unit. The most visible prototype was the Quiet Revolution that had begun in Quebec in 1960. In the 1970s, Alberta and Saskatchewan, eager to protect their energy revenues and to reinvest them in the future growth of their provinces, joined in this new autarky. The election of the separatist Parti Québecois in 1976 added a shrill note to the chorus of demands for ever-increased autonomy. Newfoundland, anticipating revenues from offshore oils, was a noisy latecomer. The GDAs were an excellent tool for province-building; they made federalism a truly profitable partnership for the provinces, for Ottawa carried a major share of the cost.[11]

Non-expenditure Programs

In 1977, an explicit tax policy was introduced. It provided higher investment tax credits in poorer regions as a way of regionally differentiating its stimulative effect. Unfortunately, data on the regional impact of these credits are not available. Based on a crude method of estimation, it has been calculated that, for 1978, the value of the credits were $261 million, or almost twice the level of RDIA grants in that year. Other programs were also increasingly differentiated by region, including an employment tax credit and unemployment insurance benefits. The regional transfers in these programs exceeded one billion dollars in 1978, about twice DREE's entire budget (Lithwick, 1982b: 139-141).

The Clark Interlude

In May 1979 a minority Progressive Conservative government led by Joe Clark was elected. Clark viewed Canada as a nation of culturally and economically diverse regions, for which the provinces were fully legitimate advocates. The design of the GDAs corresponded with this outlook. The new government announced its intentions of strengthening DREE's role in co-ordinating the activities of other federal ministries and in establishing a regional development fund for relevant federal projects of benefit to needy regions.[12] Federal-provincial relations appeared to warm under the Clark administration. The periphery was now included in the established power base in Ottawa, and had the Tories survived the election of February, 1980, it is likely the trend to decentralization would have continued.

Policy Assessment

The GDAs represented Ottawa's recognition that provinces pursuing regional development had to proceed in distinct ways. Unfortunately, the GDAs precluded the creation of inter-provincial economic policies, where closer economic integration of the Canadian economy could have been achieved. Indeed, throughout the GDA period the provincial governments continued to implement procurement, transportation and marketing policies that promoted their own jurisdiction to the detriment of the others.

More irksome to the federal Liberals was their view that the provincial governments were claiming the bulk of political credit for the GDA programs. Furthermore, other federal departments such as Transport; Energy, Mines and Resources; and Industry, Trade and Commerce saw themselves as having a national mandate and were unwilling to shift resources or programs to correspond to GDA program objectives which they considered to be parochial (Lithwick, 1982b: 131). Political control of regional development policy by the federal Liberals was further weakened by the elaborate federal-provincial bureaucracies required for the operation of the GDAs. As in the Pearson years, key policy control appeared to lie at the bureaucratic level, although by now, both federal and provincial bureaucrats were pulling the strings (Savoie, 1981: 153).

Termination of DREE

With these problems in mind the federal government began to back away from DREE and, in particular, the GDA approach that had come to dominate its efforts after 1973. DREE itself concluded that any new regional programs would require: (1) greater federal interdepartmental co-operation; (2) more consistency with other economic policies; and (3) a secure source of federal funding. The federal government was also concerned with the broader implications of province-building. For with provincial power came increased provincial intervention into the workings of the Canadian common market (Trebilcock *et al.*, 1977). Provincial economic development, at least as it was being implemented, was seen to be directly at odds with national economic development. Regional economic development would have to be reformulated if the Canadian economy was to regain its economic potential.

The federal government had already begun to shift its focus to deal with these concerns. Increasingly, economic development concerns were given a sectoral focus (e.g., energy), with regional considerations at best secondary (Lithwick, 1982b: 140-145). In its key strategy paper of November 1981, "Economic Development for Canada in the 1980s," the federal government clearly identified a sectoral approach that, because it was heavily based on resource exports, would coincidentally benefit all regions. This was a far cry from the well-defined strategic approach to provincial development of the GDAs. In addition, to further downplay the role of the provinces, attention was to be directed to "local development" of subunits within provinces. Finally, a major reorganization was being conceived which would embody these radically altered approaches and thereby launch a new era in regional economic policy.

Integrating Regional and Sectoral Development: The Reorganization, 1981-

The early 1980s featured sharpened hostility in federal-provincial relations. Patriation of the Constitution and the Quebec referendum on sovereignty-association added to the strains on Canadian federalism. The struggle between the energy rich provinces and Ottawa over resource rents, and especially the National Energy Program (NEP), further aggravated regional tensions. The increasingly narrow political base of the Liberals in the periphery reflected these tensions, and indeed played a major role in convincing Trudeau of the importance of the visibility issue. This was to be achieved by means of maximizing direct contact between the federal government and the individuals, businesses, and organizations which benefitted from federal funding and programming. The channeling of funds through provincial bodies was perceived as ultimately serving regionalist divisions because the programs appeared as provincial, rather than federally shared, initiatives (Doern, 1981: ch. 1).

Policy Context

The economy began an even steeper slide into recession. Real growth declined sharply, and unemployment and inflation soared to over 10 percent. Once again, the peripheral regions were hardest hit. But for the first time, central Canada fared almost as badly. Under these circumstances it was urgent to concentrate on national economic recovery. This required stimulating the more advanced provinces, which had historically been an important engine of growth. The strategy was set out in the Economic Development paper of 1981. Thus, the establishment of a $4 billion Western Development fund in October 1980 signalled that a prosperous region, which had been ignored by DREE, would have to play a leading role in the new development framework. Similarly, industrial and international trade policies favouring Ontario and Quebec would receive much greater attention.

The long-standing popular regional conception of Canada as composed of underdeveloped peripheral provinces and a highly developed core, appeared to have been finally laid to rest by the energy boom in the West. More and more through the 1970s the issue was seen as an East (Quebec and Atlantic) versus West partitioning. But in the 1980s every province was hurting. It was recognized that regional and national development policies must be closely integrated and mutually supportive.[13]

The rational approach of Trudeau's planners which emphasized institutional design (and almost continual redesign) to achieve a greater policy control and co-ordination, had been directed to this challenge with the creation of the Board of Economic Development Ministers (BEDM) and the Ministry of State for Economic Development (MSED) in early 1979. DREE became but one of many agencies under this policy umbrella and its status diminished thereby. MSED's major task was to address the sectoral requirements, as spelled out in 23 sector task force reports, and try to rationalize them.

This sectoral approach was articulated in the Economic Development paper which was tabled with the ill-fated November 1981 Budget. The emphasis was on resource sector mega-projects. These would in turn stimulate infrastructure and manufacturing industries. It was asserted that all regions had potential for mega-project development so that regional development would be an inevitable consequence of this strategy.

Policy Design

The assumptions that all regions would be swept along as the new economic strategy gained momentum and that a new approach to regional development was now appropriate led to the major reorganization of several economically important departments in 1982. The reorganization was intended to strengthen departmental sensitivities to the importance of regional development and to enhance Canada's export promotion capacity. DREE and IT&C would be disbanded and the bulk of their programs and responsibilities absorbed by the new Department of Regional Industrial Expansion (DRIE). DRIE would focus exclusively on national industrial and commercial concerns. IT&C involvements in the resource sector would pass to resource departments while its trade function would pass to a restructured Department of External Affairs (DEA) which would have a trade branch with a Minister for International Trade. Regional development planning and policy formation as well as trade policy development would become the responsibility of the new Ministry of State for Economic and Regional Development (MSERD) which was an expanded version of MSED.

This institutional restructuring fundamentally altered the relationship between sectoral and regional development policies. Regional development no longer would have a comprehensive departmental base. The new focus for regional development policy would be at the Cabinet rather than the departmental level. The intention was to make regional economic development a feature of the programs and policies of all departments in the economic sector. In order to provide the necessary support to the Minister in his role as the coordinator of regional development policy, regional offices of MSERD were created in each province during 1982. The Federal Economic Development Co-ordinator (FEDC) in each region became responsible for: the provision of information about each region directly to the Cabinet through the Minister; coordinating federal developmental programs in the regions; and maintaining contact with the provincial governments. Actual implementation of policies is in the hands of the respective program departments.

Implementation

The institutional reorganization was largely completed in 1984. A major new initiative in resource development has been the $2.25 billion Northeast British Columbia Coal Project, which has provided bulk handling facilities for coal in northern B.C. In addition, there has been the reorganization of the Newfoundland fishing industry. The federal government stepped into the reorganizational process in Nova Scotia fishing also. The painful parliamentary battle over the alteration of the Crow Rates arose from the federal decision to increase the incentives for the rail handling of non-grain resources (e.g., coal and potash), and thereby enhance their export potential. A new Industrial and Regional Development Program (IRDP) was created in June 1983. This program consolidates many existing programs of IT&C and DREE in the area of industrial and commercial development. While established levels of funding for most existing programs was to be maintained, the IRDP was also to administer the $300 million Special Recovery Investment Fund announced in the April 1983 Budget. The intention of the program is to simplify access and enhance direct contact between individual applicants and the federal government through the establishment of one-stop-shopping in the regions for federal industrial assistance, thus meeting the visibility objective. The IRDP thus attempts to combine two not necessarily complementary policy concerns: regional development and industrial development. Although consistent with the intentions of the 1981 Economic Development paper, its success or failure will depend very heavily on the logic of that paper, and the optimistic assumptions about the economic environment on which the strategy was based.

That the challenge may be unattainable is suggested in the actual technique developed to provide assistance. Under the IRDP, designated areas for special economic development assistance are to be phased out. The program is to rely instead upon a "Development Index" to determine what level of assistance is appropriate in each of 189 specific sub-provincial districts. The Index is based upon the district's unemployment level, average per capita income, and the fiscal capacity of the province in which it is located. Assistance is available for a variety of investment objectives: to enhance the industrial development climate through the creation of specialized non-profit institutions and infrastructure; innovative product development, technology development and related studies; the establishment of new plants and the modernization and expansion of existing facilities; market development; and industrial restructuring.

Provinces are not the regional development focus of this new program. The more developed areas of an economically disadvantaged province may be eligible for the lowest levels of assistance, while the least developed areas of an industrialized province may qualify for the highest levels of assistance. The potential for avoiding provincial input and maximizing federal visibility is obvious.

If provinces have been effectively downgraded as regions for economic development policy, the designation of subunits doesn't necessarily solve the problem that led to federal concern about the Canadian common market. The problem that strong provinces created was that of barriers to mobility and efficient resource use. Weakening the provinces was intended to reduce those barriers and to spur national development. But the strategy for dealing with the new subunits, from selecting them to funding them, demonstrates little if any appreciation of the need to deal with regions as integrated spatial components of a national economy. Rather, they are approached as autonomous developmental units whose links to each other, and hence to the national economy, seem to be of little concern. Once again no national policy for regional development appears to guide these fragmented efforts.

The Western Development Fund

The other major development program with strong regional implications was the establishment of the Western Development Fund. It was, from the outset, a rather ill-defined effort, with little initial regional input. Indeed, when first proposed to Premier Lougheed as early as July 1980, he was quite negative, perhaps because it was seen as a means to deflect criticism of the NEP. Ottawa pressed ahead with it and in the Budget Speech of October 28, 1980, the creation of a $4 billion fund was announced, with half to be spent in the period 1980-83. Negotiations with the provinces were to determine actual expenditures, but they were to reflect, in the first instance, federal priorities: modernizing the transportation and grain handling system, and industrial diversification. By 1983 the new Finance Minister was preoccupied with the recession and in the April Budget announced a new $4.8 billion contra-cyclical special recovery program focusing on capital projects, an investment fund, and export financing. The 1984 federal Budget doesn't mention the Western Development fund, and it is unclear where it now stands.

Assessment

The post-1981 changes have been very ambitious and reflect a sharp break with the evolutionary trends in regional policy that preceded them. First, there has been a greater emphasis on development rather than compensation. Second, that emphasis has attempted to put national economic priorities ahead of those of the provinces. In part, this involved creating a federal spokesperson for and in the provinces in lieu of provincial spokespersons. In addition, by focusing on sub-provincial units, the visibility of Ottawa would be enhanced, and the relatively free rein given to the provinces under the GDAs would be checked. Because these changes are recent, no adequate evaluation can be provided yet. Funding has been seriously curtailed due to the persisting deficit. No less serious has been the change in the global energy picture,[14] which has made the entire mega-project strategy questionable. More recent attempts to rescue the industrial strategy by negotiating free trade arrangements with the U.S. appear to be based on no clear regional development strategy, particularly for the peripheral regions. The ad hoc efforts, such as the Western Development Fund and the Special Recovery Program have little merit as regional development policies. And the combination of a badly battered economy and a somewhat simplistically conceived approach to regional development leads to the pessimistic conclusions that the problem area of regional disparities, which has contributed so significantly to tensions in the federal system, will continue to be a divisive and debilitating feature of this country.

Summary and Conclusions

This evaluative survey has attempted to summarize the ebb and flow of approaches to the regional development issue in Canada over the past 40 years. Our most important finding is that regional disparities have not disappeared. Despite widely varying policy thrusts and economic circumstances, there has been little improvement in the relative position of most of the poorer provinces as measured by income net of transfers. The only significant changes have been in the region west of Quebec, where the relatively rich provinces of Ontario and B.C. have converged closer to the average Canadian experience, and the once poorer province of Saskatchewan has improved considerably, as has Alberta. The widely discussed "improvement" in personal incomes that is supposed to have taken place in the eastern half of Canada has been due primarily to their increased share of transfer payments. It seems reasonable to conclude that there has been no substantiated progress with regard to regional development.

There are also grounds for serious doubt about the depth of federal concern over regional development. In fact, most federal regional efforts have gone into compensatory policies, with very little being directed to actual development efforts. To demonstrate this point, comprehensive estimates of the relevant totals were developed for the periods under examination. Table A3 presents estimates of all federal cash and tax transfers to the provinces. Table A4 provides detailed expenditures for selected economic development programs, and compares them to the total of federal transfers. The key finding is that from a high of 9.9 percent of transfers in the Pearson era, economic development programs are currently only 3.7 percent of the transfers. Finally, Table A5 compares DREE's departmental expenditures to federal transfers. We observe here also a steady decline, from close to 6 percent in the early years (1968-73) to 2.5 percent by 1983. Clearly then, most of Ottawa's efforts have gone into compensatory type programs.

But the situation is even more frustrating. In the period 1973-1981, when regional policy had become a serious and reasonably well articulated goal of public policy, real disparities actually worsened for all of the poorer provinces, save Quebec, whose position remained roughly stagnant. Two conclusions follow from this. The first is that progress with regard to regional development would appear to be highly dependent upon the broader context of national economic development. The immediate policy conclusion is clear. A necessary condition for improving relative and absolute regional economic performance is improving the performance of the Canadian economy as a whole. The second conclusion is that regional development policy cannot be pursued in the absence of a clear understanding of how the regions relate to the national economy. Attempts to "solve" the problem via the "foreign aid" approach by transferring spending powers from rich to poor provinces may, in most circumstances, actually make matters worse, by delaying necessary adjustments in the poorer areas and by taxing efficient behaviour in the richer provinces. Since this process will reduce national economic efficiency, the result will necessarily mean augmented real disparities. And this failure to adjust will in turn mean that compensation payments will be a continued and expanding drain on federal resources.

The alternative route has been for Ottawa and the provinces to try to solve the problem by building regions. But in Canada the regions that we have focused on are the provinces. While this is natural, given our federal structure, the results of province-building have also been damaging to the national economy. Dysfunctional competition for industry, artificial barriers to trade and factor flows, and misguided, grandiose concepts of what is possible at the provincial level have done much harm to the provinces, directly by wasting resources, and indirectly by again reducing the efficiency of the Canadian economy.

Appendix

Table A1
The National Economic Milieu, by Period
1947-1983

Indicator	1947-57	1957-63	1963-68	1968-73	1973-81	1981-83
Real GNE[1]	5.0	3.5	5.7	5.5	2.8	-1.0
Real GNE per Capita (%)[1]	2.2	1.3	3.9	4.2	1.6	-2.1
Unemployment rate (%)[2]	3.3	6.5	4.4	5.4	7.1	10.2
Inflation[1,3]	4.1	1.4	3.4	5.1	9.6	10.3

1. Average annual rate of growth.

2. Average annual rates. 1957-68 data based on unrevised Labour Force Survey (*Economic Review*, April 1976, p. 140). 1968-83 data based on revised (Jan. 1975) Survey.

3. Measured by implicit price index for GNE.

Source: Department of Finance, *Economic Review*, April 1983. F.H. Leacy, ed., *Historical Statistics of Canada*, 2nd edition, 1983, Statistics Canada Series D491.

Table A2
Trends in Regional Disparities for Key Years 1947-1983

Indicator Region	1947	1957	1963	1968	1973	1981	1983
Unemployment Rate							
Atlantic Provinces	4.7	8.4	9.5	7.3	7.9	11.6	15.0
Quebec	2.5	6.0	7.5	6.5	6.8	10.3	13.9
Ontario	1.8	3.4	3.8	3.5	4.3	6.6	10.4
Prairies	1.4	2.6	3.7	3.0	4.7	4.5	9.7
British Columbia	2.8	5.0	6.4	5.9	6.7	6.7	13.8
Canada	2.2	4.6	5.5	4.8	5.5	7.6	11.9
*Personal Income Per Capita**							
Newfoundland	-	.54	.56	.62	.64	.65	
Prince Edward Island	.55	.51	.59	.64	.70	.68	
Nova Scotia	.80	.74	.76	.77	.80	.79	
New Brunswick	.72	.65	.67	.70	.73	.72	
Quebec	.85	.88	.89	.89	.89	.93	
Ontario	1.16	1.20	1.17	1.17	1.14	1.08	
Manitoba	1.02	.94	.94	.97	.96	.94	
Saskatchewan	.88	.78	.98	.85	.91	1.01	
Alberta	1.06	.99	.98	1.00	1.00	1.11	
British Columbia	1.17	1.22	1.12	1.08	1.11	1.09	
Canada	1.00	1.00	1.00	1.00	1.00	1.00	
*Personal Income Less Transfers to Persons Per Capita**							
Newfoundland	-	.51	.52	.53	.54	.54	
Prince Edward Island	.52	.47	.53	.58	.64	.60	
Nova Scotia	.77	.71	.73	.73	.76	.74	
New Brunswick	.69	.61	.62	.66	.68	.65	
Quebec	.85	.86	.88	.88	.88	.89	
Ontario	1.18	1.22	1.19	1.19	1.16	1.10	
Manitoba	1.01	.94	.94	.96	.96	.94	
Saskatchewan	.86	.75	.98	.84	.91	1.00	
Alberta	1.06	.99	.98	1.01	1.01	1.15	
British Columbia	1.18	1.19	1.11	1.08	1.11	1.10	
Canada	1.00	1.00	1.00	1.00	1.00	1.00	

* (Relative: Canada = 1.00)

Source: See Table A1 and CANSIM.

Table A3
Average Annual Federal Transfers to the Provinces and Municipalities, 1947-57 to 1984-85 by Period[1]
($ Millions)

	1947-57	1957-63	1963-68	1968-73	1973-81	1981-83
Fiscal transfer cash payments[2]	237.8	452.7	418.7	993.9	2,818.9	4,852.9
Established programs financing cash payments[3]	7.4[6]	191.0	455.9	1,588.9	3,853.4	5,766.8
Other cash payments[4]	101.3	299.8[7]	709.2	1,065.0	2,223.5	3,952.4
Total cash payments	346.5	943.5	1,583.8	3,647.8	8,895.8	14,572.1
Established programs financing tax transfers[5]	-	-	-[8]	352.5	2,481.2	4,802.2
Total cash payments[9] and tax transfers	346.5	943.5	1,583.8	4,000.3	11,377.0	19,374.3

1. Sources: Department of Finance, Federal-Provincial Relations and Social Policy Branch Statistics Summaries (various years).

2. Includes net of Statutory Subsidies; Tax Rental Payments; Fiscal Equalization; Revenue Guarantee; Public Utilities Income Tax Transfer; Youth Allowance Recovery; Share of Federal Estate Tax; Interest Payments on 1962-67 Overpayments; Sharing of Undistributed Income; Sharing of Oil Export Tax; Sales Tax Reduction Program; Population Recovery Adjustment Payments; and Prior Year Adjustments. Reciprocal Taxation payments are not included.

3. Includes Hospital Insurance; Medicare; University Grants and Post-Secondary Education; Extended Health Care; and

similar transfers for years prior to the EPF arrangements. Also includes the value of tax abatements for provincial programs which have been "contracted out" to Quebec before 1976-77.

4. Includes Municipal Grants; Vocational and Educational Grants; Canada Assistance Plan and other Welfare; various departmental transfers for Agriculture, Industry and Trade, Transportation, Natural Resources and Environment, Economic Development, Regional Development; and all other federal cash transfers. Includes value of tax abatements for "contracting out" arrangements with Quebec prior to 1976-77.

5. Includes the estimated value of tax transfers to the provinces for post-secondary education which began in 1967-68 and the value of "contracting out" tax transfers to Quebec after 1976.

6. Annual average for period 1951-52 to 1956-57.

7. Annual average for period 1959-60 to 1962-63.

8. The 1967-68 post-secondary-education tax transfer of $227.6 million is excluded since it occurred only in the last year of the period.

9. Excluded from these totals are the values of abatements of federal taxes made under the 1962 Fiscal Arrangements Act between 1962 and 1972. These abatements were partial withdrawals of the federal government from the income and corporate tax fields in order to allow the provinces to exercise their taxing authority under the BNA Act (1867). There was no obligation on the part of the provinces to either occupy this tax area or restrict their taxes to an equal amount. Hence there was no direct correlation between the value of the federal abatements and the additional revenue enjoyed by the provinces. After 1972 such abatements ceased to be considered as federal transfers to the provinces. For long-term consistency it is thus necessary to exclude them.

Table A4
Comparison of Average Annual Federal Transfers to Provinces, With Annual Averages of Selected Economic and Regional Development Program Expenditures by Period[1] ($ Millions)

	1946-57	1957-63	1963-68	1968-73	1973-81	1981-83
Area Development Incentives Act	-	-	17.4	35.0	-	-
Atlantic Development Board	-	-	22.1	40.0	-	-
Agricultural and Rural Development Act	-	3.7	15.8	22.7	24.1	12.3
Cape Breton Development Corp.	-	-	-	39.2	53.6	114.7
Fund for Rural Economic Development	-	-	6.1	34.6	44.1	-
General Development Agreements	-	-	-	-	224.1	257.2
Maritime Marshland Rehabilitation Act/ Prairie Farm Rehabilitation Act	3.5	15.7	25.1	10.6	-	-
Regional Development Incentives Act	-	-	-	88.6	93.9	134.7
Roads to Resources	-	9.0	5.7	1.1	-	-
Technical and Vocational Training Act	-	84.2	162.1	1.2	-	-
Trans-Canada Highway	15.9	53.6	64.5	21.3	1.2	-
Winter Works	-	4.2	-	-	-	-
Total of Selected Programs	19.4	170.4	318.8	294.3	441.0	518.9
Total Federal Transfers	346.5	943.5	1,583.8	4,000.3	11,377.0	19,374.3
Program Expenditures as Percentage of Total Transfers	5.6	18.1	20.1	7.4	3.9	3.7
Program Expenditures Excluding Technical and Vocational Training Act as Percentage of Total Transfers	5.6	9.1	9.9	7.3	3.9	3.7

Note: [1] Sources: Public Accounts (various years); DREE Annual Reports (various years); Table A3.
For programs operative over less than the full period annual averages only for the years of operation are used.

Table A5
Average Annual Federal Transfers to Provinces and Municipalities Compared to Average Annual DREE Expenditures for Selected Periods[1]
($ Millions)

	1968-73	1973-81	1981-83
Average Annual DREE Expenditures	235.2	486.3	484.4
Average Annual Federal Transfers	4,000.3	11,377.0	19,374.3
DREE Expenditures as Percentage of Federal Transfers	5.9	4.3	2.5

1. Sources: Table A3
Public Accounts (various years)

Footnotes

1. Federal transfers to the provinces as a percentage of federal expenditures grew from 9.3 percent in 1957 (virtually unchanged over the preceding decade) to 14.5 percent in 1963 (Bird, 1979: 57).

2. Federal expenditures as a percentage of total government expenditures had declined from 56 percent in 1956 to 46 percent in 1963. Federal taxes fell from 71 percent to 58 percent over the same period (Bird, 1979: 68).

3. By 1968, federal transfers constituted 19 percent of federal expenditures (Bird, 1979: 57).

4. By 1968 federal expenditures as a share of total government expenditures had fallen to 40 percent (from 46 percent in 1963) and federal taxes were 52 percent of total taxes (from 58 percent in 1963). Also, most of the increase had been in unconditional rather than conditional grants, augmenting provincial autonomy (Bird, 1979: 68).

5. Quoted by Jean Marchand, "A New Policy for Regional Development", speech to the Atlantic Provinces Economic Council, October 29, 1968.

6. Pillai and Francis (1972: 61) concede that the concept, as adopted by the Department, was nebulous in character.

7. Standing Committee on Regional Development, *Proceedings*, April 10, 1973, 2: 11.

8. Many of these papers appear in Lithwick (1978). Of particular relevance are those by Robert S. Woodward (chapter 7d) and Dan Usher (chapter 7f).

9. On a national accounts basis, the federal Budget shifted from a small surplus in 1973 and 1974 to a deficit of $7 billion in 1981, and over $30 billion by 1983. (*Bank of Canada Review*, February 1984).

10. In 1971, 70 percent of DREE's staff was in Ottawa, whereas by 1978 the figure was only 50 percent (Lithwick, 1982b: 134).

11. Federal transfers to the provinces continued to expand as a share of federal revenues: from 21 percent in 1973, they grew to 28 percent in 1978 (Department of Finance, 1983).

12. Standing Committee on Regional Development, *Proceedings*, November 13, 1979 2: 18.

13. It may well be that such an integration had not been attempted since McDonald's National Policy (Lithwick, 1982a).

14. Oil and natural gas – in the case of Alberta and Saskatchewan, and coal in the case of B.C. – have been disappointing leading sectors recently.

References

Atlantic Provinces Economic Council, 1971. *The Atlantic Economy: Fifth Annual Review*. Halifax: APEC.

Bird, Richard M., 1979. *Financing Canadian Government: A Quantitative Overview*. Toronto: Canadian Tax Foundation.

Brewis, T.N., 1969. *Regional Economic Policies in Canada*. Toronto: Macmillan.

________________ 1974. "Regional Economic Policy in Canada". In N. Hansen (ed.), *Public Policy and Regional Economic Development: The experience of Nine Western Countries*. New York: Ballinger.

Careless, A.D., 1977. *Initiative and Response: The Adaptation of Canadian Federalism to Regional Development*. Montreal: McGill-Queen's Press.

Doern, G.B. (ed.), 1981. *How Ottawa Spends Your Tax Dollars, 1981*. Toronto: James Lorimer and Co.

Department of Regional Economic Expansion, 1980. *Departmental Profile*. Ottawa: DREE.

Francis, J.P. and N.G. Pillai, 1972. *Regional Development and Regional Policies: Some Issues and Recent Canadian Experience*. Ottawa: Department of Regional Economic Expansion.

French, R., 1980. *How Ottawa Decides: Planning and Industrial Policy-Making, 1968-1980*. Toronto: James Lorimer and Co.

Gillespie, Irwin and Richard Kerr, 1977. *The Impact of Federal Economic Expansion Policies on the Distribution of Income in Canada*. Ottawa: Economic Council of Canada.

Gordon, M. Scott, 1965. "A Twenty Year Perspective: Some Reflections on the Keynesian Revolution in Canada". In *Canadian Economic Policy Since the War*. Ottawa: Canadian Trade Committee.

Green, Alan A., 1974. "Regional Economic Disparities". In L. Officer and L. Smith (eds.), *Issues in Canadian Economics*. Toronto: Macmillan.

Hayter, Roger and Keith Storey, 1979. "Regional Development in Atlantic Canada: Emerging Directions and Public Policy", *Plan Canada*, 19, 2.

Howland, R.D., 1957. *Some Regional Aspects of Canada's Economic Development*. Ottawa: Royal Commission on Canada's Economic Prospects.

Kent, Tom, 1962. *Social Policy for Canada: Towards a Philosophy of Social Security*. Ottawa: Policy Press.

Lithwick, N. Harvey (ed.), 1978. *Regional Economic Policy: The Canadian Experience*. Toronto: McGraw-Hill Ryerson.

_______________ 1982a. "Canadian Regional Policy: Undisciplined Experimentation", *Canadian Journal of Regional Science*, 5,2: 275-282.

_______________ 1982b. "Regional Policy: The Embodiment of Contradictions". In G.B. Doern (ed.), *How Ottawa Spends Your Tax Dollars, 1982*. Toronto: James Lorimer and Co.

MacIntosh, W.A., 1965. "The White Paper on Employment and Its 1945 Setting". In *Canadian Economic Policy Since the War*. Ottawa: Canadian Trade Committee.

Newman, Peter, 1973. *Renegade in Power: The Diefenbaker Years*. Toronto: McClelland and Stewart.

Savoie, Donald J., 1981. *Federal-Provincial Collaboration: The Canada-New Brunswick General Development Agreement*. Montreal: McGill-Queen's Press.

Springate, David, 1973. *Regional Incentives and Private Investment*. Montreal: C.D. Howe Research Institute.

Stevenson, G., 1981. "Federalism and Intergovernmental Relations". In M.S. Whittington and G. Williams (eds.), *Canadian Politics in the 1980s*. Toronto: Macmillan.

Trebilcock, M.J., G. Kaiser and R.S. Pritchard, 1977. "Interprovincial Restrictions on the Mobility of Resources: Goods, Capital and Labour". In *Issues and Alternatives - 1977*. Toronto: Ontario Economic Council.

PART TWO

INTEGRATION AND OWNERSHIP OF THE CANADIAN ECONOMY

Chapter 5:

The Multinational Firm and Regional Development

Bernard Bonin
Roger Verreault

Many countries, including Canada, have attempted to disperse industry into low employment areas. In order to accomplish this goal, various incentive programs have been established by governments. Since foreign investors are seeking possible locations for industry, it is felt that they will respond to these incentives. Indeed, the basic hypothesis often is that, although the incentives are available to all investors, the multinational enterprise (MNE), for various reasons, will be more responsive than local investors.

Proponents of this viewpoint have been prompt to point to the French experience of the 1960s, which they claim shows that multinational manufacturing companies have in fact responded more favourably, and thus have helped to alleviate regional disparities. Stated another way, the incentives necessary to offset the long-run costs and inconveniences of locating manufacturing facilities away from financial and management centers, and presumably away from large cities, should be less for multinationals than for domestic investors.

Already in the 1960s, there was some evidence that Canada would not fit that pattern very well. Using 1961 data, Ray (1967) shows that manufacturing employment under foreign control is more concentrated in Ontario than manufacturing employment as a whole; that the proportion of manufacturing employment in the largest cities is substantial; and that employment under U.S. control, in particular, is highly concentrated in the south of Ontario, due to the proximity of American headquarters. Hence, it was believed that foreign control might have exacerbated, not alleviated, regional disparities in Canada. As a matter of fact, had foreign investment in manufacturing industries been equally distributed in Canada, Quebec would have had a 7 percent increase in manufacturing jobs over what she had in 1961 (about

31,000 jobs); the Atlantic provinces would have had a 10 percent increase (with the exception of Nova Scotia where a slight decrease would have resulted, given a relatively high concentration of U.K. investment in that province); and the Prairies and B.C. would have benefitted from a 12 percent increase. On the other hand, Ontario would have suffered a substantial loss of manufacturing jobs. We shall return to Ray's study later on.

In this paper, we will first review evidence from abroad. Then we will use Statistics Canada data to see if Ray's results still hold, and to examine the manner in which conditions have evolved over a twenty year period (macroeconomic approach). Finally, we will try to identify locational considerations that might differ in multinational enterprises from those affecting similar choices of national enterprises (microeconomic approach).

Evidence from abroad

John Dunning (1981) has recently surveyed some forty empirical studies on locational strategies in the United Kingdom, Ireland, Belgium, and the Netherlands. Two major questions have been investigated: First, will the choice of sites of foreign based enterprises be dominated by locational considerations that are different from those affecting choices by national enterprises (what we have called the microeconomic view)? It is generally recognized that it will be (Vernon, 1974). Second, will the investment location decisions of multinational enterprises tend to strengthen the agglomeration tendencies prevailing in the spatial structure of market economics? It is not at all clear from the existing literature and the available statistical evidence that it will indeed be so.

No clear picture emerges from studies of the second type. This might be because the available information for comparisons with national firms is inadequate. The seemingly contradictory results obtained by various studies may also come from treating the multinational enterprises as a homogeneous group without considering their structural and organizational characteristics.

Blackbourn (1974) claims that foreign based enterprises, and especially American enterprises in Europe, show a marked preference for the areas of heavy industrial concentration. Klemmer (1979) presents a similar argument. Both authors think that multinational enterprises behave in this manner as part of a locational strategy of risk minimization, since risks are greater, and the probability of failure higher, in an unfamiliar environment. On the other hand, Faith (1972) has found a heavy concentration of European multinationals in areas of labour surpluses and of recent industrial development in the United States.

The picture is also ambiguous if one seeks to identify a causal link between the effectiveness of government regional policies and the locational strategies of multinational corporations. Some, like Holland (1976), argue that these policies, designed precisely to reduce regional unemployment and income disparities, will be made less effective because: 1) the effect of regional labor subsidies is reduced (through the MNE's access to low cost foreign labor); or 2) regional capital incentives will be made less effective by the MNE's capacity to charge local subsidiaries high import prices from subsidiaries located in low tax countries (that is by the use of transfer pricing); or 3) governments, faced with firms that are more mobile than national firms, tend to relax their controls. Evidence to the contrary can be found in a 1968 report of the then Board of Trade (Howard, 1968) which shows that, between 1945 and 1965, foreign based companies moving plants into the U.K. had a much higher propensity to locate those plants in the development areas than British companies. Further analysis for the post-1965 period has shown similar trends (Dicken and Lloyd, 1976; Watts, 1979). In Belgium, it would also appear that multinational corporations have been influenced by regional policy incentives in selecting locations (Van den Bulcke, 1971).

Other studies indicate similar results. For instance, the Irish experience confirms that foreign plants, marketing in the U.K. and located in towns below 5000 population, showed a significantly greater tendency to establish in the peripheral development areas than indigenous Irish ones, and that other types of foreign plants displayed a tendency to locate in those areas about equal to that of Irish enterprises (O'Farrell, 1980). A 1973 report by the U.S. Tariff Commission (1973) claims that incentives for regional development have an important influence on the choice of location by MNEs within a foreign country, and the British inquiry into location attitudes (1964-1967) (House of Commons, 1974) indicates that regional policy incentives were regarded as a major factor influencing location choice by a significantly higher proportion of overseas owned firms than by the population of firms as a whole. The significance of policy incentives has been challenged by Kemper and de Smidt (1980), however, based on the location of manufacturing establishments in Holland.

This is admittedly a very brief review of the existing literature. We hope, however, to have reviewed sufficient evidence to show that the contribution of multinational enterprises to the struggle against regional disparities remains a debatable issue. Indeed, those who concluded earlier, based upon the French experience, that regional development is one of the areas where host countries can expect major benefits from multinational firms, have obviously jumped too quickly to that conclusion since other evidence certainly points in different directions. But what about the Canadian experience?

The multinational firm and regional development in Canada: the macroeconomic approach

Michael Ray's (1967) results were for 1961 and concerned only the location of employment under foreign and Canadian control. Using a similar analysis for 1970, 1976 and 1981, we have attempted to see how conditions have evolved over a twenty-year period. We have used three different variables to determine the location of resident-owned and non-resident owned firms in Canada: the number of establishments[1], employment and value added[2]. Since the results obtained with the three variables are generally similar, and since regional disparities in Canada have been more widely discussed in terms of differences in the employment level, our comments will be limited to the employment variable. The statistical results for the number of establishments and value added can, however, be found in Appendixes 6 to 12.

The data on the number of establishments, employment and value added under Canadian control, U.S. control and other non-resident control come from Statistics Canada's publication, *Le contrôle national et étranger des établissements manufacturiers au Canada* (cat. 31-401). The definitions are those of Statistics Canada. Hence, employment here includes mostly production workers and excludes data for head offices, sales offices and ancillary units. Location quotients[3] were then calculated for 1970, 1976, 1981, adding to Ray's results for 1961. The data do not permit one to distinguish a new investment from the acquisition or takeover of an existing firm; they do not account for the long-term presence of a particular firm in the area; and neither do they inform us on the sale or liquidation of a manufacturing establishment. What we have here is not the process by which firms enter into or exit an industry or a region; it is instead a static image for different years, the trend of which is indicative only of changes in that process[4]. Moreover, given the hypothesis we are exploring here, the focus will be on the manufacturing sector.

Let us look first at the distribution of manufacturing employment in Canada by country of control (Appendix 1). We may note the following: First, although foreign control over manufacturing employment in Canada seems to be on the rise between 1961 and 1981, in fact the ratio peaks in 1970, and declines afterwards to reach 25.9 percent in 1981. Second, subdividing foreign control into U.S. control and other foreign control, similar trends emerge in both cases, although at very different levels. Third, the results for Canada as a whole hold also for most provinces, where employment under foreign control peaks in 1970. Only Nova Scotia is a clear exception to the rule in this regard, due to the importance of foreign control other than U.S. And, fourth, Appendix 1 also shows that provinces differ widely insofar as the role of foreign control of manufacturing employment is concerned within their respective economies. In 1981, some 43 percent of manufacturing employment in Ontario is under foreign control (36 percent under U.S. control), followed by Nova Scotia, with Quebec being a very distant third (second for employment under U.S. control).

Appendix 1 gives the extent of foreign control in some provinces, but it does not tell us if foreign control is more highly concentrated than Canadian control. In other words, the fact that Ontario has 43 percent of her manufacturing employment under foreign control must be seen in relation to the share of total Canadian manufacturing employment found in Ontario. Should the manufacturing activity in Canada be highly concentrated in Ontario, it would not be totally unexpected to find a strong presence of manufacturing employment under foreign control in that province. In order to obtain these ratios, we calculated the proportion of total manufacturing employment in Canada that can be found in each province (Appendix 2), for each type of control. The results can be easily understood by taking only two cases: Ontario and Quebec.

In 1981, two-thirds of all manufacturing employment in Canada under U.S. control can be found in Ontario (slightly on the rise by comparison with 1961), as well as 45 percent of manufacturing employment under foreign control other than U.S. control. Overall, Ontario is responsible for 62 percent of all manufacturing employment in Canada under foreign control, while 41 percent of employment under Canadian control can also be found in Ontario. Globally, 48 percent of manufacturing jobs in Canada were located in Ontario in 1981. By comparison, Quebec is responsible for 20 percent of U.S. controlled manufacturing employment in Canada and 27 percent of other foreign-controlled employment, for a total of 22 percent of the employment that is under foreign control; 32 percent of manufacturing jobs under Canadian control are also in Quebec.

Globally, close to 29 percent of all manufacturing jobs in Canada were in Quebec in 1981. Hence, more than three-fourths of all jobs in the manufacturing sector were in these two provinces. However, Quebec's share in Canada has been constantly decreasing since 1961.

We are now in a position to determine whether or not there has been a concentration of manufacturing jobs under foreign control in some provinces.[5] To do so, location quotients and coefficients of localization have been calculated. Appendix 3 gives us the location quotients, dividing, for instance, the percentage of jobs under U.S. control in a given province by the percentage of total manufacturing jobs in Canada that can be found in that province. When the quotient is between zero and one, it will be said that the given province faces a shortage of jobs under a certain type of control; when it is over one, the quotient shows that a concentration of manufacturing jobs under a certain type of control exists. Taking P.E.I. as an example, the value of the quotient for employment under foreign control in 1981 is 0.23, which means that the percentage of employment under foreign control is much lower than the relative importance of that province in total manufacturing employment in Canada. In other words, P.E.I. does not get the share of employment under foreign control that could be expected, given the place she occupies in manufacturing employment in Canada.

The data from Appendix 3 can be summarized by emphasizing two points in particular: First, the value of the quotient fluctuates quite a bit over the years, and in some cases it will go from shortage to concentration, or conversely. The value of the quotient for employment under Canadian control, however, is generally over one for most provinces. Two exceptions are worth mentioning: Ontario and, for some years, Nova Scotia. There, the corresponding value for employment under foreign control is well over one in Ontario (due to U.S. control), and for some years, just over one in Nova Scotia (due to foreign control other than U.S.).

Second, subdividing foreign control into U.S. and other clearly shows the extent of U.S. control in Ontario. Indeed, results for 1961 and 1981 show that Ontario's share of manufacturing employment under U.S. control has increased over a twenty-year period relative to her share of manufacturing employment in Canada. This trend hardly shows substantial changes since Michael Ray's work of two decades ago (1967). In the Prairies and B.C., clear gains have been made for manufacturing employment under foreign control other than U.S.

Appendix 3 helps us determine where manufacturing employment under foreign control is high compared to total manufacturing activity in Canada. Based on these data, however, the question remains as to whether manufacturing activity under foreign control is more highly concentrated in Canada than manufacturing activity as a whole. The coefficient of localization (Isard, 1960) shows very clearly that it is.

Table 1
Coefficients of Localization

	1961	1970	1976	1981
U.S.	0.0266	0.1579	0.1730	0.1877
Other Foreign	x	0.0469	0.0770	0.0567
Total Foreign	0.0200	0.1252	0.1268	0.1400
Canadian	0.0089	0.0853	0.0766	0.0708

Note: Results for 1961 are from Ray's work. For 1970, 1976 and 1981, they are our own. Because of some differences, they must not be read horizontally (notice the unexplained jump between 1961 and 1970), but vertically.

In 1961, manufacturing employment under U.S. control was about three times more concentrated than that under Canadian control; in 1981, it remains much more concentrated, although slightly less than in 1961. Manufacturing employment under foreign control other than U.S. control is, however, much more equally distributed.

In order to correct for a possible bias in the quotients and coefficients of localization we have also used another measure of concentration. Up to this point, the extent of foreign control has been compared with the relative importance of a province in total manufacturing employment. It is obvious that these ratios will be affected by already existing firms. For instance, the strong presence of U.S.-controlled firms in Ontario increases the share of this province in total manufacturing employment in Canada. An increase in foreign control will be reflected in the quotients or coefficients of localization, but less than if there had been only a weak presence of foreign-controlled firms in the first place.

Hence, we have assumed that the provincial distribution of employment under foreign control is the same as that under Canadian control, and have calculated the effect of this assumption on the level of manufacturing employment in each province. Results can be found in Appendix 4. Had manufacturing employment under U.S. control and under Canadian control been equally distributed, there would have been 90,000 fewer manufacturing jobs in Ontario in 1981 (a decrease of some 14 percent from the actual 1981 level). On the other hand, Quebec would have gained 40,000 manufacturing jobs (an increase of more than 10 percent); B.C. 15,000 (+12.5 percent); Alberta 8,400 (+14.0 percent); Saskatchewan 4,000 jobs (+26.0 percent); Manitoba 6,900 jobs (+16.4 percent) and so forth. Had manufacturing employment under foreign control other than U.S. and under Canadian control been equally distributed, Nova Scotia would have lost 4,700 manufacturing jobs (-16.5 percent of the 1981 level), Newfoundland 200 jobs, and Ontario 4400 (-0.7 percent). All other provinces would gain. In brief, Ray's results for 1961 still hold twenty years later. The trend has not really changed; the magnitudes have only become greater.

Finally, within provinces, the importance of the larger census metropolitan areas cannot be ignored for manufacturing jobs under foreign control as well as under Canadian control (Appendix 5). Overall, the concentration of manufacturing employment in these areas is much less for the Atlantic provinces than for the rest of Canada, where Manitoba (Winnipeg) stands out with an exceptionally high concentration. Employment under Canadian control is more concentrated than that under foreign control in metropolitan areas of Newfoundland, New Brunswick, Ontario, Saskatchewan and British Columbia. In other provinces, employment under foreign control tends to concentrate more in large metropolitan areas[6].

The multinational firm and regional policy: the microeconomic approach

What factors will affect the size of the subsidy required to induce a multiplant firm (national or multinational) to establish production units in less preferable locations? To what extent do the structural and organizational characteristics of the multinational enterprises make them more responsive to regional subsidies than a multilocation domestic enterprise? How does multinationality as such, and the fact that a local subsidiary is part of an enterprise with a global strategy, influence the choice of location within a national economy?

These questions concern the microeconomic effectiveness of regional policy, that is the impact of regional incentives on the locational decision of the individual firm.

A detailed analysis of the multinational firm in that respect might distinguish between the location of:

1. top echelon management (headquarters activities, hardly decentralized)[7];
2. production units;
3. marketing (where decision-making will often be decentralized); and
4. R and D, which could then be subdivided between fundamental or basic research, product adaptation, and research, undertaken to respond to pressures from host countries governments; the degree of decentralization might go from virtually nil for fundamental research to substantially higher for other types of R and D (Martin, 1985).

In turn, Dunning (1981) has classified as product and enterprise-related the factors that are likely to have an impact on the effectiveness of regional incentives when applied to a multinational enterprise. The *product-related* variables include: First, the skill and/or capital intensity of the production process. The skill intensity of the production process will likely influence the size of the break-even subsidy; capital intensity might do the same for the size of the subsidy equivalent of incentives. The higher the capital intensity of production, the greater will be the size of the subsidy equivalent of incentives, if the incentive is capital based; the opposite will hold, if the incentives are labour based (Donaldson, 1966; Thoman, 1973).

Second, the extent to which the production process is subject to economies of scale at the plant level. Where such economies of scale are small in relation to the size of the market surrounding the firms's regional centre of production, the tendency to decentralize activities in response to regional incentives will be stronger.

Third, the physical characteristics of the product, for example, the bulk or weight to value-added ratio. The importance of freight costs likely will be to induce firms to locate near either the source of their materials or of their markets.

Fourth, the age and/or uniqueness of the product. In its initial phase of marketing, a new product requires quick and close communications between the marketing and the R and D departments of the firm, as well as between designers and manufacturers. In these stages of the development of the product, the tendency will be to locate production facilities near the innovative center of the enterprise, which is rarely found in assisted regions[8].

The enterprise-related variables include: First, the internal organization of the enterprise. In a spatially dispersed multiplant firm, the balance between centralizing and decentralizing decisions is crucial in determining the cost of delays in management contracts, particularly those involving face to face contacts (Thorngren, 1970; Chandler, 1962).

Second, the extent of vertical integration of the firm. A lack of subcontracting facilities in the assisted areas might impose extra costs to firms locating there. In a vertically integrated firm, this might not cause great inconvenience since the production unit can draw upon other producing units of the whole organization.

Third, the motivation of investment. If the motivation of investment is to improve the firm's overall rate of return, the location decisions will be based on factors relating to costs and to the reliability of production. If, instead, the investment is based upon strategic considerations (for instance, in a so-called defensive investment), it will tend to be less sensitive to regional policy incentives.

Fourth, the size of the firm. Company planning tends to be more systematic in large firms, which means that they are better equipped to handle extensive search procedures for sites.

Fifth, the firm's ratio of capital equipment to total capital, which has an impact, among other factors, on the subsidy equivalent of a system of differential depreciation allowances[9].

Sixth, the equity/debt ratio, which will determine the relative effectiveness of interest-rate subsidies.

If indeed considerations such as those aforementioned influence the effectiveness of regional policy, is multinationality, as such, likely to have an effect on the degree of response to the incentives? It is difficult to tell *a priori* since some characteristics of multinationality would make multinationals more responsive, while others would make them less responsive. Among factors that would make them more responsive would be: 1) foreign investment involving the shifting of lower skilled jobs from the parent to the subsidiary[10] (the size of the required subsidy might then be lower); 2) the higher capital intensity of subsidiaries of MNEs than that of indigenous firms[11], which will make them more responsive to capital subsidies; 3) foreign production often being a substitute for exports, affiliates will then concentrate more than multilocation domestic enterprises, in the production of goods with relatively low bulk or weight ratio to value added, making assisted area locations attractive at a lower level of a break-even subsidy; 4) manufacturing affiliates of MNEs usually produce "standardized" products[12], not tied to a few innovative centers; 5) many, and maybe even most, MNEs have internal organizations based on the multidivisional form of enterprise, which means that in addition to the advantages it brings in factor mobility and reduced costs of management communications, they are also in a position to take simultaneous advantage of a variety of fiscal incentives locating their labor intensive activities where such incentives exist, and their capital intensive ones where incentives reduce the cost of capital; 6) many MNEs are vertically integrated which gives them more flexibility in locational decisions; 7) to the extent that size is important in this respect, MNEs responsiveness would be greater since many of them are large firms indeed; 8) the relatively low equity to debt ratio of the affiliates due to large borrowings of funds abroad, encouraged for the American multinationals by the balance of payments guidelines of the 1960s, and for the Japanese multinationals, by a traditional financing through bank loans at home.

On the other hand, factors such as the following would likely make multinationals less responsive to regional policy incentives: 1) their relatively higher degree of research intensity and above average advertising budgets will tend to make the locational requirements of at least some of their functions less flexible[13]; 2) economies of scale are admittedly probably more important for MNEs than for their indigenous counterparts, but some of the more important scale factors (e.g. proprietary knowledge within the firm) being space free, they can be used in combination with other factors in many different locations, and not only in the initial place of the firm's growth; 3) if direct investment is a function of imperfect competition and market failure, as it is often viewed[14], strategic considerations might very well dominate the choice of locations as part of an oligopolistic reaction (Knickerbocker, 1973) instead of rate of return considerations. This would make them less responsive to incentives. The difficulty with this approach, however, is that one cannot say for sure that, because capital flows from countries with low rates of return to countries where such rates are higher, investment is clearly motivated by strategic considerations. One of the important barriers to entry which gives rise to market imperfections is the existence of a proprietary knowledge within the firm. Because this knowledge can be used almost anywhere, foreign direct investment raises the expected return to research activity. But then, in research intensive industries, the internal rate of return on foreign direct investment will exceed the average rates of return in the host countries. Moreover, the payment of royalties or management fees by subsidiaries to parent companies must be based on some form of transfer pricing. When transfer pricing is used within a multinational corporation, assessing the profitability of operations in a particular host country becomes a difficult task[15].

Conclusion

Based on the macroeconomic evidence from Canada, it does not appear that foreign controlled firms have alleviated regional disparities in employment level. Insofar as manufacturing employment is concerned, the evidence would even point to the contrary. The dominance of Ontario, as a favored location of foreign controlled (and, more particularly, U.S.-controlled) manufacturing employment, has not substantially changed over a twenty-year period.

Multinational enterprises are not really committed to a particular region of a country, whereas inertia often impedes the movement of national firms away from the region where their initial growth has taken place. A foreign-controlled firm may be more flexible when contemplating a location in assisted areas or the adaptation of technology to conditions of underdeveloped regions.

Affiliates of foreign-owned firms might very well be subject to more pressures from the host governments when negotiating entry. An indication that they are responsive to regional policy incentives may improve relations with governments and reduce the political risks inherent in foreign investment.

The MNEs have room to manoeuvre if they wish to shift the burden of taxation. Not only can they shift the tax burden forward (on the product) or backward (e.g. on labour) within the country in which they operate, but they can also shift their tax burden between countries through the use of internal pricing policies for non-arm's length transactions. This fundamentally differentiates them from indigenous firms. This also enables them to reduce the element of uncertainty regarding changes in regional policies during the lifetime of an investment project. For instance, should the incentives be reduced, the reduction can be treated as an increase in corporate income taxes and the burden can be subsequently shifted, transferred, by channels available to multinational enterprises.

Yet, other aspects of multinationality may make multinational enterprises less responsive to regional policy. The behaviour of a MNE's affiliates may be constrained by some government policies. For instance, should access to the local capital market be restricted, interest rate subsidies might not have much impact on location decisions of foreign controlled firms facing these restrictions. The choice of location within a country by affiliates may also be constrained by parent companies. Evidence would cast doubt, however, upon the strict control of the affiliates by headquarters in this regard (Groo, 1971; McNee, 1974). This scanty evidence would rather show that managers of the local subsidiary are usually consulted as to the choice of a specific location within a host country, and their decision seldom overruled by headquarters.

It might be appropriate to speculate here on the implications of the regional concentration of foreign investment in Canada, in view of a possible free trade agreement with the United States[16]. We will focus on three elements that even the most sophisticated models do not fully consider.

First, following a free trade agreement with the U.S., a rationalization of the manufacturing sector can be expected in Canada. There is no reason why this rationalization process should be limited to production jobs; headquarters activities will also be affected. Given the concentration in Ontario of manufacturing jobs under U.S. control, and headquarters of U.S. multinationals' Canadian subsidiaries[17], the probability that Ontario will be the most affected by the restructuring of the Canadian manufacturing sector is obviously strong.

Second, most Canadian exports to the U.S. are the intra-firm variety (between 60 and 80 percent according to different sources, and depending on the definitions). It would be difficult to state, at this stage, that this trade between related parties, as it is sometimes called, is determined by factors that are different than those determining trade between independent parties. It is quite possible, however, that this type of relationship would be an element of stability for the Canadian export trade, should a free trade agreement with the U.S. become a reality.

Finally, it would be useful to be able to answer the following question with a reasonable degree of certainty: If a free trade agreement is concluded between the U.S.A. and Canada, what factors would make Canada an interesting location for investors other than U.S. investors? Previous experiences in regional integration certainly show that foreign investors from non-member countries are attracted to the zone by the sudden extension of the internal market. But the question here becomes, in the case of the United States and Canada, why should foreign investors decide to locate in Canada instead of in the U.S.?

Footnotes

1. For a different approach based on the location of headquarters in Canada, see R.K. Semple and W.R. Smith (1981); and also the paper by Keith Semple in this volume (Chapter 6).

2. Another interesting study aims at distinguishing the performance of firms under Canadian francophone control, Canadian anglophone control and foreign control in Quebec (Raynauld and F. Vaillancourt, 1984).

3. Statistics Canada calculates the quotient by dividing the percent of Canadian (or U.S., or other foreign) controlled employment in a particular area by its percentage of all-Canada employment (excluding data for head offices, sales offices and ancillary units). The quotient varies from 0 (complete shortage) to 1.0 (no relative shortage or concentration) and higher (concentrated). Mention is also made of a coefficient of localization calculated by subtracting the percentage of Canadian-controlled (or U.S., or other foreign) employment in a particular industry in one area by the area's share of that industry's employment in all of Canada, summing the positive differences and dividing by 100.

4. Since Canada is a country of origin, as well as a host country, for multinational firms, changes in the distribution of employment around the world for the Canadian multinationals is worthy of attention here. Statistics Canada (1981) has published some data on that question. Fifty-two Canadian multinationals had, in 1978, at least 300 employees abroad for a total of 420,500 employees, that is 39 percent of their total employment. Between 1975 and 1978, total employment in these firms increased by 5.9 percent compared to 7.2 percent for the other Canadian firms. But the Canadian multinationals increased their employment abroad by 12 percent, while their employment in Canada increased only moderately. In spite of this shifting trend, only one Canadian region has experienced *a net decrease* (in absolute numbers) in employment by the Canadian multinationals: the number of jobs in Quebec decreased by some 12,700 from 1975 to 1978.

5. Although the manufacturing sector will be treated here as a whole, a similar analysis could be carried out with more disaggregated data (for some twenty sectors).

6. For headquarters employment, see Semple's contribution to this volume (Chapter 6).

7. Except for the so-called regional offices of MNEs. See Grosse (1982).

8. Studies on the product life cycle (Vernon, Hirsch, Wells, and so forth) are relevant here, although the interval between first production in the country of origin of the MNE and the first sale abroad (or first production abroad by a subsidiary of the MNE) might be getting shorter.

9. The life of the asset is also relevant. See Scholefield and Franks (1972).

10. As is often the case in what is known as off-shore production.

11. Subsidiaries of MNEs are often more capital intensive either because they concentrate in different industries than domestic firms or because they adopt different (more capital-intensive) processes of production when in the same industries.

12. That is, products which are at a later stage of their life cycle, although as stated earlier, this might be changing.

13. For many decades American multinationals were reluctant to locate R and D facilities abroad and maybe more so to decentralize decision-making in this regard.

14. See the work of Hymer, Caves and many others on the industrial organization approach to foreign direct investment and the transactional model approach which goes back to Coase (1937), Williamson and more recently Mark Casson (1984).

15. A thorough review of the theoretical and empirical literature on the multinational firm can be found in B. Bonin (1984).

16. See William Watson's discussion of this issue in Chapter 7 of this book.

17. Again, see the discussion by Semple in this book (Chapter 6).

Appendix 1

Provincial Distribution of Manufacturing Employment By Controlling Country (%)

	1961	1970	1976	1981
Nfld.				
U.S.	x	5.1	9.2	3.9
Other	x	27.0	14.2	11.3
Tot. For.	20.5	32.1	23.4	15.2
Can.	79.5	67.9	76.6	84.8
TOTAL	100.0	100.0	100.0	100.0
P.E.I.				
U.S.	x	x	x	x
Other	x	x	x	x
Tot. For.	2.5	x	x	7.7
Can.	97.5	x	x	92.3
TOTAL	100.0	100.0	100.0	100.0
N.S.				
U.S.	3.8	13.4	13.0	12.1
Other	26.5	15.9	23.5	23.9
Tot. For.	30.3	29.3	36.5	36.0
Can.	69.7	70.7	63.5	64.0
TOTAL	100.0	100.0	100.0	100.0
N.B.				
U.S.	10.6	14.5	14.0	10.1
Other	1.9	10.2	4.5	3.9
Tot. For.	12.5	24.7	18.5	14.0
Can.	87.5	75.3	81.5	86.0
TOTAL	100.0	100.0	100.0	100.0
Que.				
U.S.	16.8	24.1	21.1	18.5
Other	7.2	7.3	7.5	7.4
Tot. For.	24.1	31.4	28.6	25.9
Can.	75.9	68.6	71.4	74.1
TOTAL	100.0	100.0	100.0	100.0

Appendix 1 (Cont'd)

	1961	1970	1976	1981
Ont.				
U.S.	30.7	43.1	41.3	36.0
Other	6.9	8.0	6.2	7.3
Tot. For.	37.6	51.0	47.5	43.3
Can.	62.4	49.0	52.5	56.7
TOTAL	100.0	100.0	100.0	100.0
Man.				
U.S.	12.0	17.9	18.0	14.0
Other	5.1	7.7	7.2	7.8
Tot. For.	17.1	25.5	25.1	21.9
Can.	82.9	74.5	74.9	78.1
TOTAL	100.0	100.0	100.0	100.0
Sask.				
U.S.	14.9	13.5	13.7	7.9
Other	2.3	7.0	6.2	5.4
Tot. For.	17.2	20.5	19.9	13.3
Can.	82.8	79.5	80.1	86.7
TOTAL	100.0	100.0	100.0	100.0
Alta.				
U.S.	15.0	21.9	21.3	15.6
Other	3.4	7.6	8.5	8.7
Tot. For.	18.4	29.7	29.8	24.2
Can.	81.6	70.6	70.2	75.8
TOTAL	100.0	100.0	100.0	100.0
B.C.				
U.S.	14.4	26.3	22.8	16.9
Other	4.4	7.6	7.4	7.3
Tot. For.	17.8	33.9	30.2	24.2
Can.	82.2	66.1	69.8	75.8
TOTAL	100.0	100.0	100.0	100.0
Canada				
U.S.	22.5	32.4	30.4	25.9
Other	7.0	8.1	7.2	7.7
Tot. For.	29.5	40.5	37.7	33.6
Can.	70.5	59.5	62.3	66.4
TOTAL	100.0	100.0	100.0	100.0

Appendix 2

Manufacturing Employment by Controlling Country (% of Total)

	1961	1970	1976	1981
Nfld.				
U.S.	x	0.14	0.27	0.17
Other	x	3.06	1.75	1.66
Tot. For.	0.54	0.72	0.56	0.51
Can.	0.88	1.04	1.10	1.44
TOTAL	0.78	0.91	0.89	1.13
P.E.I.				
U.S.	x	x	x	x
Other	x	x	x	x
Tot. For.	0.01	x	x	0.04
Can.	0.19	x	x	0.25
TOTAL	0.14	0.19	0.13	0.18
N.S.				
U.S.	0.36	0.87	0.90	1.00
Other	8.10	4.15	6.86	6.65
Tot. For.	2.19	1.53	2.05	2.29
Can.	2.09	2.51	2.15	2.06
TOTAL	2.14	2.11	2.11	2.14
N.B.				
U.S.	0.84	0.85	0.84	0.71
Other	0.48	2.40	1.14	0.93
Tot. For.	0.75	1.16	0.90	0.76
Can.	2.19	2.40	2.39	2.36
TOTAL	1.78	1.90	1.83	1.83
Que.				
U.S.	25.12	23.52	20.98	20.63
Other	34.88	28.69	31.57	27.76
Tot. For.	27.40	24.55	23.02	22.27
Can.	35.90	36.56	34.72	32.27
TOTAL	33.63	31.69	30.31	28.91

Appendix 2 (Cont'd)

	1961	1970	1976	1981
Ont.				
U.S.	64.15	64.02	65.67	66.87
Other	46.54	47.62	41.63	45.40
Tot. For.	59.99	60.75	61.05	61.95
Can.	41.25	39.70	40.70	41.10
TOTAL	47.08	48.23	48.37	48.10
Man.				
U.S.	1.77	1.68	1.87	1.71
Other	2.40	2.89	3.13	3.21
Tot. For.	1.92	1.92	2.11	2.05
Can.	3.86	3.81	3.80	3.71
TOTAL	3.32	3.05	3.16	3.16
Sask.				
U.S.	0.66	0.36	0.49	0.35
Other	0.32	0.75	0.92	0.81
Tot. For.	0.58	0.44	0.57	0.46
Can.	1.16	1.16	1.38	1.50
TOTAL	1.00	0.87	1.07	1.15
Alta.				
U.S.	2.03	2.07	2.64	2.71
Other	1.52	2.88	4.41	5.09
Tot. For.	1.91	2.26	2.98	3.26
Can.	3.50	3.65	4.25	5.15
TOTAL	3.06	3.08	3.77	4.52
B.C.				
U.S.	4.96	6.46	6.26	5.81
Other	3.76	7.51	8.53	8.40
Tot. For.	4.68	6.67	6.69	6.40
Can.	8.98	8.83	9.33	10.12
TOTAL	7.97	7.96	8.34	8.87

Appendix 3

Location Quotient (Employment)

	1961	1970	1976	1981
Nfld.				
U.S.	0.1105	0.1576	0.3034	0.1506
Other	x	3.3519	1.9631	1.4734
Tot. For.	0.6939	0.7937	0.6225	0.4538
Can.	1.1172	1.1405	1.2281	1.2762
P.E.I.				
U.S.	x	x	x	x
Other	x	x	x	x
Tot. For.	0.0860	x	x	0.2288
Can.	1.3696	x	x	1.3900
N.S.				
U.S.	0.1681	0.4133	0.4270	0.4659
Other	3.7850	1.9672	3.2495	3.1111
Tot. For.	1.0251	0.7228	0.9697	1.0721
Can.	0.9784	1.1887	1.0183	0.9635
N.B.				
U.S.	0.4709	0.4480	0.4603	0.3899
Other	0.2697	1.2662	0.6246	0.5093
Tot. For.	0.4227	0.6110	0.4918	0.4172
Can.	1.2292	1.2649	1.3070	1.2947
Que.				
U.S.	0.7470	0.7420	0.6923	0.7136
Other	1.0372	0.9051	1.0416	0.9602
Tot. For.	0.8156	0.7745	0.7594	0.7701
Can.	1.0675	1.1535	1.1453	1.1162
Ont.				
U.S.	1.3628	1.3273	1.3578	1.3903
Other	0.9885	0.9875	0.8608	0.9439
Tot. For.	1.2743	1.2596	1.2622	1.2880
Can.	0.8762	0.8232	0.8416	0.8544

Appendix 3 (Cont'd)

	1961	1970	1976	1981
Man.				
U.S.	0.5340	0.5504	0.5914	0.5420
Other	0.7229	0.9488	0.9878	1.0179
Tot. For.	0.5785	0.6298	0.6676	0.6511
Can.	1.1646	1.2521	1.2008	1.1764
Sask.				
U.S.	0.6625	0.4175	0.4518	0.3044
Other	0.3315	0.8669	0.8565	0.7050
Tot. For.	0.5828	0.5070	0.5296	0.3962
Can.	1.1629	1.3357	1.2842	1.3053
Alta.				
U.S.	0.6638	0.6742	0.7009	0.6009
Other	0.4967	0.9375	1.1698	1.1262
Tot. For.	0.6244	0.7335	0.7910	0.7213
Can.	1.1456	1.1861	1.1263	1.1409
B.C.				
U.S.	0.6383	0.8116	0.7504	0.6545
Other	0.4839	0.9444	1.0234	0.9469
Tot. For.	0.6016	0.8380	0.8029	0.7215
Can.	1.1550	1.1103	1.1191	1.1408

Appendix 4

Manufacturing Employment: Difference Between Canadian and Foreign Control

					% of provincial Manufacturing employment			
	1961	1970	1976	1981	1961	1970	1976	1981
Nfld.								
U.S.	-2248	-3393	-3204	-4394	-22.7	-31.9	-28.1	-29.1
Other	1007	1898	606	229	10.6	17.8	5.3	1.5
Tot. For.	-1241	-1495	-2598	-4165	-12.5	-14.0	-22.8	-27.6
P.E.I.								
U.S.	x	x	x	-857	x	x	x	-36.0
Other	x	x	x	-255	x	x	x	-10.7
Tot. For.	-674	x	x	-929	-37.8	x	x	-39.0
N.S.								
U.S.	-4933	-6198	-4846	-3683	-18.4	-25.2	-18.0	-12.9
Other	5305	1547	4353	4726	19.8	6.3	16.2	16.5
Tot. For.	372	-4651	-493	1042	1.4	-18.9	-1.8	3.6
N.B.								
U.S.	-3849	-5869	-6009	-5719	-17.1	-26.5	-25.8	-23.4
Other	-1513	2	-1153	-1476	-6.7	.0	-4.9	-6.0
Tot. For.	-5362	-5866	-7162	-7194	-23.8	-26.5	-30.7	-29.5
Que.								
U.S.	-30727	-49381	-53340	-40304	-7.2	-13.3	-13.8	-10.4
Other	-902	-7413	-2907	-4643	-0.2	-2.0	-0.8	-1.2
Tot. For.	-31629	-56793	-56247	-44948	-7.4	-15.4	-14.5	-11.6
Ont.								
U.S.	65304	92042	96976	89243	11.0	16.4	15.7	13.9
Other	4669	7457	858	4433	0.8	1.3	0.1	0.7
Tot. For.	69973	99500	97834	93676	11.8	17.7	15.8	14.6
Man.								
U.S.	-5963	-8092	-7490	-6931	-14.2	-22.8	-18.5	-16.4
Other	-1296	-870	-623	-515	-3.1	-2.4	-1.5	-1.2
Tot. For.	-7259	-8962	-8113	-7446	-17.3	-25.2	-20.1	-17.6

Appendix 4 (Cont'd)

					% of provincial Manufacturing employment			
	1961	1970	1976	1981	1961	1970	1976	1981
Sask.								
U.S.	-1424	-3020	-3462	-3982	-11.3	-29.8	-25.3	-25.9
Other	-740	-383	-423	-710	-5.8	-3.8	-3.1	-4.6
Tot. For.	-2164	-3403	-3886	-4692	-17.1	-33.6	-28.4	-30.5
Alta.								
U.S.	-4201	-5962	-6234	-8443	-10.9	-16.6	-12.9	-14.0
Other	-1751	-720	152	-69	-4.5	-2.0	0.3	-0.1
Tot. For.	-5952	-6582	-6083	-8512	-15.4	-18.3	-12.6	-14.1
B.C.								
U.S.	-11452	-8996	-11939	-14941	-11.6	-9.7	-11.2	-12.6
Other	-4612	-1243	-738	-1771	-4.7	-1.3	-0.7	-1.5
Tot. For.	-16064	-10239	-12677	-16712	-16.3	-11.0	-11.9	-14.1

Appendix 5

Type of Control in Metropolitan Areas (% of Provincial Total)

	Establishments		Employment		Value Added	
	1970	1976	1970	1976	1970	1976
Nfld.						
Tot. For.	27.3	36.4	8.7	14.9	12.0	20.4
Can.	30.4	30.4	21.1	19.8	33.1	31.7
N.S.						
Tot. For.	21.5	26.2	30.4	20.4	38.0	27.7
Can.	15.1	20.0	14.5	17.1	22.6	27.9
N.B.						
Tot. For.	16.7	14.6	13.0	10.8	20.0	10.9
Can.	13.8	13.4	26.5	27.7	37.2	41.0
Que.						
Tot. For.	60.3	63.7	52.2	59.5	55.9	66.1
Can.	56.2	60.2	58.2	56.5	60.1	57.2
Ont.						
Tot. For.	56.8	59.3	53.2	55.6	55.7	55.7
Can.	60.0	64.3	63.5	64.3	66.2	66.2
Man.						
Tot. For.	77.3	77.4	74.9	83.0	76.7	78.7
Can.	70.2	70.0	84.9	80.5	85.2	81.1
Sask.						
Tot. For.	56.9	63.8	43.5	53.5	51.5	52.0
Can.	35.1	43.0	51.2	63.3	57.3	64.8
Alta.						
Tot. For.	75.4	75.4	69.6	73.5	71.3	72.6
Can.	58.8	64.1	70.2	68.7	72.0	70.9
B.C.						
Tot. For.	57.9	59.3	46.8	44.9	49.2	43.1
Can.	56.6	58.8	52.1	48.6	51.8	41.0
Canada						
Tot. For.	55.8	60.5	48.2	55.5	50.7	57.0
Can.	54.4	59.5	57.8	58.4	60.0	59.6

Appendix 6

Distribution of Manufacturing Establishments By Controlling Country (%)

	1970	1976	1981
Nfld.			
U.S.	2.0	5.2	3.8
Other	6.7	3.6	2.8
Tot. For .	8.7	8.8	6.6
Can.	91.3	91.2	93.4
TOTAL	100.0	100.0	100.0
P.E.I.			
U.S.	x	x	1.3
Other	x	x	3.3
Tot. For.	x	x	4.7
Can.	x	x	95.3
TOTAL	100.0	100.0	100.0
N.S.			
U.S.	4.8	7.4	5.3
Other	3.2	2.6	2.3
Tot. For.	7.9	10.0	7.6
Can.	92.1	90.0	92.4
TOTAL	100.0	100.0	100.0
N.B.	4.1	4.9	5.8
Other	4.7	2.8	3.2
Tot. For.	8.8	7.8	8.9
Can.	91.2	92.2	91.1
TOTAL	100.0	100.0	100.0
Que.			
U.S.	5.6	6.4	4.6
Other	2.0	2.8	2.5
Tot. For.	7.7	9.2	7.0
Can.	92.3	90.8	93.0
TOTAL	100.0	100.0	100.0

Appendix 6 (Cont'd)

	1970	1976	1981
Ont.			
U.S.	14.2	15.1	11.5
Other	3.1	3.3	3.6
Tot. For.	17.2	18.4	15.1
Can.	82.8	81.6	84.9
TOTAL	100.0	100.0	100.0
Man.			
U.S.	7.2	8.7	6.9
Other	2.6	3.8	3.4
Tot. For.	9.8	12.5	10.3
Can.	90.2	87.5	89.7
TOTAL	100.0	100.0	100.0
Sask.			
U.S.	3.8	5.6	4.1
Other	3.1	3.9	3.0
Tot. For.	6.9	9.5	7.1
Can.	93.1	90.5	92.9
TOTAL	100.0	100.0	100.0
Alta.			
U.S.	6.2	8.0	5.8
Other	3.0	3.5	3.3
Tot. For.	9.2	11.6	9.1
Can.	90.8	88.4	90.9
TOTAL	100.0	100.0	100.0
B.C.			
U.S.	7.0	7.5	5.0
Other	3.1	3.1	2.9
Tot. For.	10.1	10.6	7.8
Can.	89.9	89.4	92.2
TOTAL	100.0	100.0	100.0
Canada			
U.S.	9.1	10.2	7.6
Other	2.8	3.2	3.1
Tot. For.	11.9	13.4	10.7
Can.	88.1	86.6	89.3
TOTAL	100.0	100.0	100.0

Appendix 7

Number of Manufacturing Establishments By Controlling Country (% of Total)

	1970	1976	1981
Nfld.			
U.S.	0.17	0.44	0.44
Other	1.92	0.97	0.81
Tot. For.	0.58	0.56	0.55
Can.	0.82	0.90	0.92
TOTAL	0.79	0.86	0.88
P.E.I.			
U.S.	x	x	0.07
Other	x	x	0.45
Tot. For.	x	x	0.18
Can.	x	x	0.45
TOTAL	0.47	0.36	0.42
N.S.			
U.S.	1.34	1.62	1.58
Other	2.94	1.84	1.71
Tot. For.	1.71	1.67	1.62
Can.	2.68	2.32	2.35
TOTAL	2.56	2.23	2.28
N.B.			
U.S.	0.86	0.88	1.32
Other	3.28	1.62	1.80
Tot. For.	1.42	1.05	1.46
Can.	1.98	1.93	1.78
TOTAL	1.92	1.81	1.75
Que.			
U.S.	19.64	19.35	18.29
Other	23.28	27.81	24.42
Tot. For.	20.49	21.36	20.07
Can.	33.41	32.55	31.76
TOTAL	31.87	31.05	30.51

Appendix 7 (Cont'd)

	1970	1976	1981
Ont.			
U.S.	61.84	60.35	61.59
Other	43.95	42.97	47.13
Tot. For.	57.68	56.23	57.39
Can.	37.48	38.52	38.67
TOTAL	39.89	40.89	40.67
Man.			
U.S.	3.33	3.43	3.27
Other	3.95	4.76	3.95
Tot. For.	3.47	3.75	3.47
Can.	4.33	4.07	3.62
TOTAL	4.23	4.03	3.60
Sask.			
U.S.	0.96	1.14	1.14
Other	2.60	2.60	2.06
Tot. For.	1.34	1.49	1.41
Can.	2.44	2.20	2.22
TOTAL	2.31	2.11	2.14
Alta.			
U.S.	3.87	4.85	5.19
Other	6.10	6.82	7.36
Tot. For.	4.39	5.31	5.82
Can.	5.85	6.29	6.98
TOTAL	5.68	6.16	6.85
B.C.			
U.S.	7.85	7.67	7.06
Other	11.41	10.17	10.05
Tot. For.	8.68	8.27	7.93
Can.	10.39	10.74	11.17
TOTAL	10.19	10.41	10.83

Appendix 8

Location Quotient (Establishments)

	1970	1976	1981
Nfld.			
U.S.	0.2172	0.5105	0.4999
Other	2.4338	1.1365	0.9148
Tot. For.	0.7331	0.6590	0.6205
Can.	1.0361	1.0528	1.0455
P.E.I.			
U.S.	x	x	0.1755
Other	x	x	1.0706
Tot. For.	x	x	0.4357
Can.	x	x	1.0677
N.S.			
U.S.	0.5219	0.7232	0.6954
Other	1.1467	0.8236	0.7497
Tot. For.	0.6673	0.7471	0.7112
Can.	1.0450	1.0392	1.0346
N.B.			
U.S.	0.4471	0.4824	0.7570
Other	1.7095	0.8950	1.0261
Tot. For.	0.7410	0.5803	0.8353
Can.	1.0350	1.0650	1.0198
Que.			
U.S.	0.6163	0.6234	0.5994
Other	0.7303	0.8959	0.8004
Tot. For.	0.6429	0.6880	0.6578
Can.	1.0483	1.0483	1.0410
Ont.			
U.S.	1.5504	1.4759	1.5142
Other	1.1019	1.0507	1.1587
Tot. For.	1.4460	1.3750	1.4109
Can.	0.9397	0.9419	0.9507

Appendix 8 (Cont'd)

	1970	1976	1981
Man.			
U.S.	0.7865	0.8518	0.9096
Other	0.9353	1.1814	1.0972
Tot. For.	0.8211	0.9300	0.9642
Can.	1.0242	1.0108	1.0043
Sask.			
U.S.	0.4158	0.5433	0.5341
Other	1.1259	1.2330	0.9669
Tot. For.	0.5811	0.7069	0.6600
Can.	1.0566	1.0454	1.0408
Alta.			
U.S.	0.6822	0.7867	0.7570
Other	1.0745	1.1066	1.0741
Tot. For.	0.7735	0.8626	0.8492
Can.	1.0306	1.0213	1.0181
B.C.			
U.S.	0.7705	0.7371	0.6524
Other	1.1201	0.9771	0.9286
Tot. For.	0.8519	0.7940	0.7327
Can.	1.0200	1.0319	1.0321

Appendix 9

Provincial Distribution of Value Added By Controlling Country

(%)

	1970	1976	1981
Nfld.			
U.S.	4.3	10.2	5.6
Other	35.2	19.7	23.0
Tot. For.	39.5	29.9	28.6
Can.	60.5	70.1	71.4
TOTAL	100.0	100.0	100.0
P.E.I.			
U.S.	x	x	x
Other	x	x	x
Tot. For.	x	x	8.1
Can.	x	x	91.9
TOTAL	100.0	100.0	100.0
N.S.			
U.S.	20.9	25.2	21.6
Other	19.6	26.5	32.0
Tot. For.	40.5	51.7	53.6
Can.	59.5	48.3	46.4
TOTAL	100.0	100.0	100.0
N.B.			
U.S.	18.1	19.9	11.4
Other	9.4	5.0	3.8
Tot. For.	27.4	24.9	15.1
Can.	72.6	75.1	84.9
TOTAL	100.0	100.0	100.0
Que.			
U.S.	33.9	29.0	25.4
Other	10.2	11.3	10.9
Tot. For.	44.1	40.3	36.3
Can.	55.9	59.7	63.7
TOTAL	100.0	100.0	100.0

Appendix 9 (Cont'd)

	1970	1976	1981
Ont.			
U.S.	49.5	48.4	42.8
Other	9.5	8.2	8.6
Tot. For.	59.0	56.6	51.4
Can.	41.0	43.4	48.6
TOTAL	100.0	100.0	100.0
Man.			
U.S.	23.5	21.0	15.7
Other	10.6	10.6	10.9
Tot. For.	34.1	31.6	26.5
Can.	65.9	68.4	73.5
TOTAL	100.0	100.0	100.0
Sask.			
U.S.	25.0	21.5	6.7
Other	7.6	9.8	8.8
Tot. For.	32.7	31.3	15.5
Can.	67.3	68.7	84.5
TOTAL	100.0	100.0	100.0
Alta.			
U.S.	32.3	29.0	27.1
Other	11.0	12.2	9.6
Tot. For.	43.3	41.2	36.7
Can.	56.7	58.8	63.3
TOTAL	100.0	100.0	100.0
B.C.			
U.S.	30.7	27.7	20.5
Other	10.0	10.0	10.0
Tot. For.	40.7	37.7	30.6
Can.	59.3	62.3	69.4
TOTAL	100.0	100.0	100.0
Canada			
U.S.	40.8	38.2	32.8
Other	10.1	9.8	9.9
Tot. For.	50.9	48.0	42.8
Can.	49.1	52.0	57.2
TOTAL	100.0	100.0	100.0

Appendix 10

Manufacturing Sector Value Added by Controlling Country (% of Total)

	1970	1976	1981
Nfld.			
U.S.	0.06	0.16	0.13
Other	2.15	1.22	1.74
Tot. For.	0.48	0.38	0.50
Can.	0.76	0.82	0.94
TOTAL	0.62	0.61	0.75
P.E.I.			
U.S.	x	x	x
Other	x	x	x
Tot. For.	x	x	0.02
Can.	x	x	0.16
TOTAL	0.10	0.09	0.10
N.S.			
U.S.	0.79	1.12	1.17
Other	2.98	4.60	5.74
Tot. For.	1.22	1.83	2.23
Can.	1.86	1.58	1.44
TOTAL	1.54	1.70	1.78
N.B.			
U.S.	0.60	0.76	0.48
Other	1.25	0.75	0.53
Tot. For.	0.73	0.76	0.49
Can.	2.00	2.12	2.07
TOTAL	1.35	1.47	1.39
Que.			
U.S.	24.05	20.28	21.25
Other	29.26	30.81	30.06
Tot. For.	25.08	22.43	23.29
Can.	32.90	30.66	30.57
TOTAL	28.92	26.71	27.46

Appendix 10 (Cont'd)

	1970	1976	1981
Ont.			
U.S.	63.67	64.83	65.12
Other	49.25	42.84	43.37
Tot. For.	60.81	60.34	60.08
Can.	43.88	42.64	42.50
TOTAL	52.50	51.53	50.02
Man.			
U.S.	1.43	1.52	1.32
Other	2.60	2.97	3.03
Tot. For.	1.66	1.81	1.71
Can.	3.33	3.61	3.54
TOTAL	2.48	2.75	2.76
Sask.			
U.S.	0.59	0.63	0.23
Other	0.72	1.12	0.99
Tot. For.	0.61	0.73	0.40
Can.	1.31	1.48	1.64
TOTAL	0.96	1.12	1.11
Alta.			
U.S.	2.73	3.32	4.67
Other	3.76	5.44	5.45
Tot. For.	2.94	3.76	4.85
Can.	3.99	4.93	6.25
TOTAL	3.46	4.37	5.65
B.C.			
U.S.	6.06	7.30	5.61
Other	7.98	10.50	9.05
Tot. For.	6.44	7.89	6.41
Can.	9.75	12.02	10.87
TOTAL	8.07	10.04	8.96

Appendix 11

Location Quotient
(Value Added)

	1970	1976	1981
Nfld.			
U.S.	0.1046	0.2670	0.1694
Other	3.4907	2.0087	2.3187
Tot. For.	0.7752	0.6228	0.6678
Can.	1.2331	1.3477	1.2481
P.E.I.			
U.S.	x	x	0.0000
Other	x	x	0.0000
Tot. For.	x	x	0.1895
Can.	x	x	1.6054
N.S.			
U.S.	0.5130	0.6598	0.6590
Other	1.9412	2.7048	3.2279
Tot. For.	0.7959	1.0775	1.2547
Can.	1.2116	0.9285	0.8097
N.B.			
U.S.	0.4428	0.5209	0.3462
Other	0.9286	0.5119	0.3792
Tot. For.	0.5390	0.5191	0.3539
Can.	1.4779	1.4432	1.4826
Que.			
U.S.	0.8315	0.7593	0.7738
Other	1.0116	1.1534	1.0946
Tot. For.	0.8672	0.8398	0.8482
Can.	1.1377	1.1476	1.1134
Ont.			
U.S.	1.2127	1.2681	1.3020
Other	0.9381	0.8379	0.8671
Tot. For.	1.1583	1.1802	1.2012
Can.	0.8359	0.8339	0.8497

Appendix 11 (Cont'd)

	1970	1976	1981
Man.			
U.S.	0.5758	0.5514	0.4766
Other	1.0492	1.0787	1.0991
Tot. For.	0.6696	0.6591	0.6209
Can.	1.3425	1.3142	1.2831
Sask.			
U.S.	0.6135	0.5640	0.2036
Other	0.7569	0.9990	0.8861
Tot. For.	0.6419	0.6528	0.3619
Can.	1.3713	1.3200	1.4766
Alta.			
U.S.	0.7913	0.7608	0.8266
Other	1.0876	1.2456	0.9648
Tot. For.	0.8500	0.8598	0.8586
Can.	1.1555	1.1292	1.1056
B.C.			
U.S.	0.7516	0.7271	0.6256
Other	0.9891	1.0164	1.0094
Tot. For.	0.7987	0.7862	0.7146
Can.	1.2087	1.1971	1.2132

Appendix 12

Manufacturing Value Added: (Difference Between Foreign and Canadian Control)

				% of provincial manufacturing value added		
	1970	1976	1981	1970	1976	1981
Nfld.						
U.S.	-56949	-100344	-197305	-46.07	-41.24	-35.43
Other	28135	15758	59120	22.76	6.48	10.62
Tot. For.	-28815	-84586	-138185	-23.31	-34.77	-24.81
P.E.I.						
U.S.	x	x	-39777	x	x	-52.72
Other	x	x	-12010	x	x	-15.92
Tot. For.	x	x	-45672	x	x	-60.54
N.S.						
U.S.	-87849	-69658	-65222	-28.52	-10.26	-4.95
Other	22657	118190	315793	7.35	17.40	23.98
Tot. For.	-65191	48532	250572	-21.16	7.15	19.03
N.B.						
U.S.	-114362	-206079	-385432	-42.25	-35.20	-37.32
Other	-14987	-53426	-112997	-5.54	-9.13	-10.94
Tot. For.	-129350	-259504	-498431	-47.79	-44.32	48.26
Que.						
U.S.	-724719	-1580388	-2267174	-12.50	-14.82	-11.15
Other	-73708	6075	-37744	-1.27	0.06	-0.19
Tot. For.	-798427	-1574313	-2304918	-13.77	-14.76	-11.34
Ont.						
U.S.	1619096	3381766	5501695	15.38	16.57	14.85
Other	108424	7864	63983	1.03	0.04	0.17
Tot. For.	1727521	3389630	5565678	16.41	16.61	15.03
Man.						
U.S.	-155616	-319645	-541256	-31.30	-29.11	-26.49
Other	-14704	-25338	-37282	-2.96	-2.31	-1.82
Tot. For.	-170320	-344983	-578539	-34.25	-31.42	-28.31

Appendix 12 (Cont'd)

				% of provincial manufacturing value added		
	1970	1976	1981	1970	1976	1981
Sask.						
U.S.	-59385	-128800	-344535	-30.93	-28.85	-41.81
Other	-11889	-14039	-48256	-6.19	-3.14	-5.86
Tot. For.	-71274	-142839	-392791	-37.13	-32.00	-47.66
Alta.						
U.S.	-10328	-245259	-38515	-14.87	-14.06	-9.16
Other	-4747	19891	-58442	-0.69	1.14	-1.40
Tot. For.	-107774	-225368	-441957	-15.55	-12.92	-10.56
B.C.						
U.S.	-301796	-718716	-1280892	-18.66	-17.94	-19.30
Other	-35805	-70925	-134136	-2.21	-1.77	-2.02
Tot. For.	-337601	-789641	-1415028	-20.87	-19.71	-21.32

Notes to the Appendices

1. Appendix 2 must be read as follows: in 1970 there was in Newfoundland 0.14 percent of Canadian manufacturing employment under U.S. control. The same year, there was 3.06 percent of Canadian manufacturing employment under foreign control other than U.S. control in Newfoundland, etc.

2. In Appendix 3, if the quotient is smaller than 1, there is a shortage (or low concentration) of employment of the type considered; if it is equal to 1, distribution is equal to the average; if it is greater than 1, a relatively high concentration. For instance, the figure for 1970 in Newfoundland shows a very low concentration of employment under U.S. control relative to this province's share of total Canadian manufacturing jobs (0.1576). On the other hand, employment under foreign control other than U.S. is highly concentrated in Newfoundland (3.3519), but the number of jobs in question is so small that the province still comes up with a "shortage" of total jobs under foreign control (0.7937).

3. In Appendix 4, a negative sign indicates that the province presently has fewer manufacturing jobs since employment under foreign control is not distributed like that under Canadian control. A positive sign means that the province presently gets more jobs because foreign control is not distributed like Canadian control. In other words, if, in 1970, employment under foreign control in Newfoundland had been distributed like the share of that province's employment under Canadian control in the Canadian total, Newfoundland would have had 1595 more manufacturing jobs. For U.S. control only, the net gain would be 3393 jobs; for other foreign control, the net loss would be 1898 jobs, etc.

4. The large metropolitan areas included in Appendix 5 are: St. John's (Newfoundland); Halifax (N.S.); Saint John (N.B.); Montreal and Quebec City (Que); Hamilton, Kitchener, London, Toronto, and Windsor (Ont.); Winnipeg (Man.); Regina and Saskatoon (Sask.); Calgary and Edmonton (Alta); Vancouver (B.C.).

5. For Appendix 7, note 1 applies, replacing employment by number of establishments.

6. For Appendix 8, note 2 applies, replacing employment by number of establishments.
7. For Appendix 10, note 1 applies, replacing employment by value added.
8. For Appendix 11, note 2 applies, replacing employment by value added.
9. For Appendix 12, note 3 applies, replacing employment by value added.

References

Blackbourn, A., 1974. "The Spatial Behavior of American Firms in Western Europe". In I.F.G. Hamilton (ed), *Spatial Perspectives on Industrial Organization and Decision Making*. New York: J. Wiley and Sons.

Bonin, Bernard, 1984. *L'entreprise multinationale et l'Etat*. Montréal: Editions Etudes Vivantes.

Casson, Mark, 1984. *The Growth of International Business*. London: George Allen and Unwin.

Chandler, A.D., 1962. *Strategy and Structure*. Cambridge, Mass: The M.I.T. Press.

Dicken, P. and P. Lloyd, 1976. "Geographical Perspectives on United States Investment in the United Kingdom". *Environment and Planning A*, 8,6.

Donaldson,L., 1966. *Development and Planning in Ireland*. New York: Praeger.

Dunning, J.H., 1981. *International Production and the Multinational Enterprise*. London: George Allen and Unwin.

Faith, N., 1972. *The Infiltrators: The European Business Invasion of America*. London: E.P. Dutton.

Groo, E., 1971. "Choosing Foreign Locations: One Company's Experience". *Columbia Journal of World Business*. September-October.

Grosse, R.E., 1982. "Regional Offices of Multinational Firms". In A.M. Rugmen (ed), *New Theories of the Multinational Enterprise*. New York: St. Martin's Press.

Holland, S., 1976. *The Regional Problem*. London: Macmillan.

House of Commons, 1974. *Regional Development Incentives: Minutes of Evidence*. Session 30, 6.

Howard, R.S., 1968. *The Movement of Manufacturing Industry in the United Kingdom: 1945-1965*. London: HMSO.

Isard, W., 1960. *Methods of Regional Analysis*. Cambridge, Mass: The M.I.T. Press.

Kemper, N.J. and M. de Smidt, 1980. "Foreign Manufacturing Establishments in the Netherlands". *Tijdschrift voor Economische en Sociale Geographie*. 71,1.

Klemmer, P., 1979. "The Regional Impact of Multinational Corporations". In D. Van den Bulcke, et al. (eds), *Investment and Divestment Policies of Multinational Corporations in Europe*. Farnborough: Saxon House.

Knickerbocker, F.T., 1973. *Oligopolistic Reaction and Multinational Enterprise*. Boston: Harvard Business School.

Martin, F., 1985. *La localisation de l'industrie pharmaceutique au Canada*. Background study for the Eastman Commission.

McNee, R.B., 1974. "A Systems Approach of Understanding the Geographic Behavior Of Organisations, Especially Large Corporations". In I.F.G. Hamilton (ed), *Social Perspectives on Industrial Organization and Decision Making*. New York: John Wiley and Sons.

O'Farrell, P.N., 1980. "Multinational Enterprises and Regional Development: Irish Evidence". *Regional Studies, 14*.

Ray, D.M., 1967. *Regional Aspects of Foreign Ownership of Manufacturing in Canada*. Waterloo: University of Waterloo.

Raynauld, A. and F. Vaillancourt, 1984. *L'appartenance des entreprises: le cas du Québec en 1978*. Québec: Editeur Officiel du Québec.

Scholefield, H.H. and J.R. Franks, 1972. "Investment Incentives and Regional Policies". *National Westminster Bank Quarterly Review*, February.

Semple, R. Keith and W.R. Smith, 1981. "Metropolitan Dominance and Foreign Ownership in the Canadian Urban System". *The Canadian Geographer*, 25, 1.

Statistics Canada, 1981. *Les effectifs au Canada et à l'étranger des grandes entreprises transnationales sous contrôle canadien. 1978.* Ottawa: Ministère des Approvisionnements et Services.

Thorngren, B., 1970. "How Do Contract Systems Affect Regional Development?". *Environment and Planning A*, 2.

U.S. Tariff Commission, 1973. *Implication of Multinational Firms for World Trade and Investment and for U.S. Trade and Labour.* Washington: U.S. Tariff Commission.

Van den Bulcke, D., 1971. *Les entreprises étrangères dans l'industrie belge: aspects généraux et économiques.* Gand: Office belge pour l'accroissement de la productivité.

Vernon, R., 1974. "Location of Economic Activity". In J.H. Dunning (ed), *The Multinational Enterprise and Economic Analysis.* London: George Allen and Unwin.

Watts, H.D., 1979. "Large Firms, Multinationals and Regional Development: Some New Evidence from the U.K.". *Environment and Planning A*,11, 1.

Chapter 6:

Regional Analysis of Corporate Decision Making Within the Canadian Economy

---

R. Keith Semple

Introduction

This paper investigates the regional distribution of corporate ownership and control in the Canadian economy in 1985. Corporate control is exerted over various regions by decision makers associated with corporate headquarters located in a system of international, national and regional urban centres. This control has both a domestic and foreign dimension, as well as one that is private and governmental. These interrelated dimensions complicate any analysis of Canadian regional development.

In Canada, the trend toward increased corporate size and associated power has been accelerating since the boom years of the 1960s and is associated with a maturing economic structure, modern technological developments and an unprecedented wave of mergers and acquisitions. For Canada and Canadians, the increasing influence and power of giant corporations are both a blessing and a source of concern. They are a blessing since they provide jobs and security, are technological innovators and have the monetary resources and administrative skills to undertake the risky and costly developments so necessary to Canadian well-being. They are a source of concern since their power is awesome and little understood, their corporate locations concentrated in a few key metropolitan centres of the country and, increasingly, they are coming under the influence of foreign investors and entrepreneurs (Semple, 1977). At the same time increasingly powerful federal and provincial crown corporations are complicating the national and regional scene. In 1985, one or two huge corporations dominate virtually every sector of the Canadian economy. In terms of their operating revenues and the assets under their control, corporations such as Canadian Pacific, General Motors, Imperial Oil, Weston, CN, Hydro-Québec, Olympia and York, and the Royal Bank command much respect and wield tremendous power. This power is concentrated in the hands of executives located in the major centres of the nation and, to a certain extent, located abroad. The analysis that follows examines the relative levels of ownership of the various financial and non-financial sectors and subsectors of the economy by region, province and urban centre, for the private sector as well as the public sector, and examines the levels and location of foreign influence. Toward this end the next section provides a general overview of the structure of the national economy.

The National Economy

This study assigns the top Canadian corporations in 1984 to one of the five major sectors and twenty-four subsectors of the economy. The largest corporations in the resource, manufacturing and service sectors are identified on the basis of revenues, and in the financial and other sectors by assets.[1] This procedure is consistent with previous business studies found in the literature. Corporations are partitioned further on the basis of ownership into foreign and domestic, while domestic is subdivided into private and Crown.[2] Table 1 summarizes the structure of the economy for the largest 1005 corporations. The top forty petroleum corporations, for example, form the largest single non-financial subsector, based upon 1984 operating revenues of just over $59 billion. The top 70 banks, the largest subsector in finance, held over $404 billion in assets. Foreign ownership is highest overall in the resource sector at 57.5 percent. The 67.9 percent of the petroleum subsector that is foreign controlled is largely accounted for by Imperial Oil, Texaco, Gulf, and Shell. In manufacturing, foreign ownership is concentrated in the strong subsectors of machinery (89.7), chemicals (66.7), and electrical (47.8), and dominated by the American firms of General Motors, Dupont and Canadian General Electric. The weakest subsectors, textiles (23.1) and metal (16.5) record the lowest level of foreign ownership. The service sector is larger than the manufacturing sector and demonstrates the post-industrial nature of the economy. Here the retail subsector is by far the largest at over $52 billion, while the wholesale subsector has almost 59 percent foreign ownership. The subsectors of transportation, communication and cooperatives have little or no outside control.

The 230 corporations that have their size measured in assets collectively control over $804 billion. The overall level of control by non-Canadian firms currently

Table 1

Total Revenues and Assets of the Largest Corporations by Sector, Subsector and Origin of Control for 1984 (in millions of dollars)*

	Sector	Subsector	Top	Private	Domestic Crown	Subtotal	Foreign Subtotal	Total	Foreign as a Percentage of Total	Crown as a Percentage of Total
I	**Resource**	1. Petroleum	40	13922	5041	18963	40080	59043	67.9	8.5
		2. Mining	40	11846	1832	13678	4032	17710	22.8	10.3
	Subtotal		80	25768	6873	32641	44112	76753	57.5	9.0
II	**Manufacturing**	1. Machinery	60	4721	625	5346	46447	51793	89.7	1.2
		2. Food	60	14607	666	15273	12095	27368	44.2	2.4
		3. Forest	40	15742		15742	5300	21042	25.2	0.0
		4. Metal	35	15616	1597	17213	3405	20618	16.5	7.7
		5. Chemical	40	870	4550	5420	10869	16289	66.7	41.9
		6. Electrical	40	6697		6697	6132	12829	47.8	0.0
		7. Misc. Manufacturing	80	5214	877	6091	6542	12633	51.8	6.9
		8. Textiles	20	4248		4248	1278	5526	23.1	0.0
	Subtotal		375	67715	8315	76030	92068	168098	54.8	4.9
III	**Service**	1. Retail	50	39797		39797	12224	52021	23.5	0.0
		2. Transport	40	19562	9724	29286	483	29769	1.6	32.7
		3. Misc. Service	75	8287	8244	16531	9893	26424	37.4	31.2
		4. Communication	40	21337	2732	24069	425	24494	1.7	11.2
		5. Wholesale	60	7785		7785	11046	18831	58.7	0.0
		6. Co-ops	25	14349		14349		14349	0.0	0.0
		7. Construction	30	2772		2772	4723	7495	62.2	0.0
	Subtotal		320	113889	20700	134589	38794	173383	22.4	11.9
	Grand Total		775	207372	35888	243260	174974	418234	41.8	8.6
IV	**Finance**	1. Banking	70	381554		381554	22903	404447	5.7	0.0
		2. Diversified	30	43016	53716	96732	8739	105471	8.3	50.9
		3. Life Insurance	25	73667		73667	13358	87025	15.3	0.0
		4. Trusts	20	46160		46160		46160	0.0	0.0
		5. Credit Unions	40	30615		30615		30615	0.0	0.0
	Subtotal		185	575002	53716	628718	45000	673718	0.0	8.0
V	**Others**	1. Utilities	25	20614	77653	98267	1050	99317	1.1	78.2
		2. Developers	20	30627		30627	567	31194	1.8	0.0
	Subtotal		45	51241	77653	128894	1617	130511	1.2	59.5
	Grand Total		230	626243	131369	757612	46617	804229	5.8	16.3

* Sectors I, II, III in Revenues. IV and V in Assets

stands at almost 6 percent primarily due to the recent chartering of over fifty-five foreign owned schedule B banks.

Federal and Crown corporations play an extremely important role in the Canadian economy. This is especially true in utilities where over 78 percent of assets are controlled by provincial corporations. Hydro-Québec and Ontario Hydro are two of the largest utilities in North America. Crown corporations play an important role in communications, miscellaneous services and transportation. Saskatchewan Telecommunications, Canada Post Corporation, Air Canada and CN represent a few of these. Petro Canada and Polysar are two that are of national importance in petroleum and chemicals.

Table 2 provides a detailed breakdown of foreign penetration of the largest corporations in the Canadian economy by nation, sector and subsector for 1984. It is not surprising that American firms account for over 73 percent of the foreign control in the non-financial sectors and almost 59 percent in the important financial sectors. The United Kingdom, Japan, Netherlands, France and Germany control percentages ranging down from approximately 10 in the non-financial sectors and down from just under 20 percent in finance. Collectively Western Europe and Japan challenge the supremacy of the United States in the financial sectors.

The Urban System

The largest cities within the Canadian urban system dominate every sector and subsector of the economy. Tables 3, 4, 5, and 6 illustrate that Toronto-based corporations account for the largest percentage of ownership in resources (52.9), manufacturing (52.4) and services (34.8). This averages to just over forty-five percent (45.1) for the non-financial sectors. Toronto dominates eleven of the seventeen subsectors with corporations, such as: Noranda in mining; GM and Ford, machinery; Canada Packers, food; Abitibi-Price, forest; CIL, chemicals; Canadian General Electric, electrical; Procter and Gamble, miscellaneous manufacturing; Bata in textiles; George Weston, retail; McDonald's, miscellaneous services; and Harda, in wholesale. Montreal dominates five subsectors with Alcan in metals; CP and CN, in transportation; Bell Canada, communication; Canada Cement Lafarge, construction; and Co-operative Federee de Quebec, co-operatives. This places Montreal in second position with over twenty percent (20.2) of the total. Calgary dominates only the largest single subsector, petroleum, and ranks third nationally with 8.7 percent of the total. Vancouver ranks fourth with corporations such as MacMillan Bloedel, Genstar and Canada

Table 2
Total Revenues and Assets by the Largest Foreign Corporations by Sector and Subsector for 1984 (in millions of dollars)*

Sector	Subsector	USA	UK	Japan	Netherlands	France	Germany	Belgium	Switzerland	New Zealand	Sweden	Italy	Australia	Total Foreign
I Resource	1. Petroleum	29739	1663		5734	2944								40080
	2. Mining	2107	1473			102	350							4032
Subtotal		31846	3136		5734	3046	350							44112
II Manufacturing	1. Machinery	45356	557				268				204	62		46447
	2. Food	7140	4497						458					12095
	3. Forest	3749	674	137						740				5300
	4. Metal	1433	1852									120		3405
	5. Chemical	8556	1357			285	323		228			120		10869
	6. Electrical	5019	255		717		141							6132
	7. Misc. Manufacturing	5651	589		54		128				120			6542
	8. Textiles	1149	129											1278
Subtotal		78053	9910	137	771	285	860		686	740	324	302		92068
III Service	1. Retail	10513	610				1101							12224
	2. Transport	483												483
	3. Misc. Service	3175	1862	3896	70		71		739				80	9893
	4. Communication	131	294											425
	5. Wholesale	4282	691	5036		85	705		73		174			11046
	6. Cooperatives													
	7. Construction	378	505		60	1118	248	1922	364		128			4723
Subtotal		18962	3962	8932	130	1203	2125	1922	1176		302		80	38794
Grand Total		128861	17008	9069	6635	4534	3335	1922	1862	740	626	302	80	174974
Percentage		73.6	9.7	5.2	3.8	2.6	1.9	1.1	1.1	0.4	0.4	0.2	-	100

Sector	Subsector	USA	UK	France	Japan	Switzerland	Germany	Hong Kong	Israel	Italy	Netherlands	Lux.	Korea	Other	Total Foreign
IV Finance	1. Banking	10125	3396	2901	2290	1402	605	452	411	312	305	279	195	231	22903
	2. Diversified Finance	7276	805	658											8739
	3. Life Insurance	8959	4399												13358
	4. Trusts														
	5. Credit Unions														
Subtotal		26360	8600	3559	2290	1402	605	452	411	312	305	279	195	231	45000
V Other	1. Utilities	1050													1050
	2. Developers		567												567
Subtotal		1050	567												1617
Grand Total		27410	9167	3559	2290	1402	605	452	411	312	305	279	195	231	44617
Percentage		58.8	19.7	7.6	4.9	3.0	1.3	1.0	0.9	0.7	0.7	0.6	0.4	0.5	100

* Sectors I, II, III in Revenues - IV and V in Assets

Table 3
Total Revenue of Resource Corporations Headquartered in Canadian Cities in 1984
(in millions of dollars)*

Rank	City	Top 40 Petroleum	Top 40 Mining	Total	Percentage of Total	Percentage Foreign
1	Toronto	26583 (22907)	14028 (3078)	40611 (25985)	52.9	64.0
2	Calgary	28897 (14223)	226 (175)	29123 (14398)	37.9	49.4
3	Vancouver	1212 (830)	1645 (201)	2857 (1031)	3.7	36.1
4	Saint John	2120 (2120)		2120 (2120)	2.8	100.0
5	Montreal		633 (332)	633 (332)	0.8	52.4
6	Saskatoon		518 (246)	518 (246)	0.7	47.3
7	Thetford Mines		217	217	0.3	-
8	Regina	160		160	0.2	-
9	Edmonton	71	87	158	0.2	-
10	Sydney		139	139	0.2	-
11	Ottawa		132	132	0.2	-
12	Quebec City			85	0.1	-
	Total Domestic	59043	17710	76753	100.0	
	Total Foreign	40080	4032	44112		
	Percentage	67.9	22.8	57.5		

* Foreign Ownership is recorded in parentheses.

Table 4
Total Revenue of Manufacturing Corporations Headquartered in Canadian Cities in 1984
(in millions of dollars)*

Rank	City	Top 60 Machinery	Top 60 Food	Top 40 Forest	Top 35 Metal	Top 40 Chemical	Top 40 Electrical	Top 80 Misc.Mfg.	Top 20 Textiles	Total	Percentage of Total	Percentage Foreign
1	Toronto	38464 (35928)	11654 (7571)	7203 (1572)	5526 (1932)	6075 (5721)	10034 (4281)	5764 (4894)	3320 (426)	88040 (62325)	52.4	70.8
2	Montreal	2615 (1448)	5433 (3369)	4547	9273 (184)	2290 (2158)	570 (503)	1793 620	1726 (516)	28247 (8798)	16.8	31.1
3	Vancouver	629	322 (78)	7131 (2722)		4180		1114 (82)		13376 (2932)	8.0	21.9
4	Windsor	6514 (6514)						75		6589 (6514)	3.9	98.9
5	Hamilton	1099 (1099)	285 (201)	213 (213)	2502 (346)	705 (705)	634 (578)	89		5527 (3142)	3.3	56.8
6	Kitchener	197 (197)	3255			310 (310)	134	120 (54)	80	4096 (561)	2.4	13.8
7	Calgary		1340			555 (256)		1778 (99)	32	3705 (355)	2.2	9.6
8	London		2132		431 (431)			886 (415)		3429 (846)	2.0	24.7
9	Ottawa	594 (364)		96	673	455	1032 (419)	68		2918 (783)	1.7	26.8
10	Sarnia					1269 (1269)				1269 (1269)	0.8	100.0
11	Sault Ste. Marie				1104					1104	0.7	0.0
12	St. Catharines	371 (371)	54	419 (419)	77			80		1001 (790)	0.6	78.9
13	Florenceville		847							847	0.5	0.0
14	Cambridge		626 (626)				21		116 (116)	763 (742)	0.5	97.2
15	Winnipeg		572					52 (52)		624 (52)	0.4	8.3
16	Quebec City			438				118		556	0.3	0.0

Table 4 (Cont'd)

Rank	City	Top 60 Machinery	Top 60 Food	Top 40 Forest	Top 35 Metal	Top 40 Chemical	Top 40 Electrical	Top 80 Misc. Mfg.	Top 20 Textiles	Total	Percentage of Total	Percentage Foreign
17	Saskatoon		376				53			429	0.3	0.0
18	Halifax		404							404	0.2	0.0
19	Brantford	175 (53)			90			94		339 (53)	0.2	15.6
20	Brockville				180 (180)		159 (159)			339 (339)	0.2	100.0
21	Peterborough	101 (101)	201 (201)							302 (302)	0.2	100.0
22	Regina				291					291	0.2	0.0
23	Guelph				83 (83)		192 (192)			275 (275)	0.2	100.0
24	St. John's (Nfld.)		262							262	0.2	0.0
25	Esterhazy					209 (209)				209 (209)	0.1	100.0
26	St. Georges Beauce			203						203	0.1	0.0
27	Duncan (B.C.)			187 (187)						187 (187)	0.1	100.0
28	Kingsley Falls (P.Q.)			180						180	0.1	100.0
29	Trois Rivières				178 (178)					178 (178)	0.1	100.0
30	St. Thomas	170 (170)								170 (170)	0.1	100.0
31	Edmonton									160 (160)	0.1	100.0
32	Stratford	59 (59)						97 (97)		156 (156)	0.1	100.0
33	Barrie					155 (155)				155 (155)	0.1	100.0
34	Collingwood							154 (154)		154 (154)	0.1	100.0

Table 4 (Cont'd)

Rank	City	Top 60 Machinery	Top 60 Food	Top 40 Forest	Top 35 Metal	Top 40 Chemical	Top 40 Electrical	Top 80 Misc. Mfg.	Top 20 Textiles	Total	Percentage of Total	Percentage Foreign
35	Sydney				139					139	0.1	0.0
36	Cranbrook			137 (137)						137 (137)	0.1	100.0
37	Norval (Ont.)		132							132	0.1	0.0
38	La Sarre			128						128	0.1	0.0
39	Temiscaming			107						107	0.1	0.0
40	Goderich	90								90	0.1	0.0
41	Brandon					86 (86)				86 (86)	0.1	100.0
42	Victoriaville							86		86	0.1	0.0
43	Cornwall							74		74	-	0.0
44	St. Jean	73 (73)								73 (73)	-	100.0
45	Fort Erie				71 (71)					71 (71)	-	100.0
46	Orillia	70 (70)								70 (70)	-	100.0
47	Belleville							67		67	-	0.0
48	Prescott								60 (60)	60 (60)	-	100.0
49	Red Deer							58		58	-	0.0
50	Others		49 (49)	53				106	32	240 (49)	0.10	20.4
	Total Domestic	51793	27368	21042	20618	16289	12929	12633	5526	168098		
	Total Foreign	(46447)	(12095)	(5300)	(3405)	(10869)	(6132)	(6541)	(1278)	(92068)		
	Percentage	89.7	44.2	25.2	16.5	66.7	47.8	51.8	23.1	54.8	100.0	

* Foreign control in parentheses.

Table 5
Total Revenue of Service Corporations Headquartered in Canadian Cities in 1984
(in millions of dollars)*

Rank	City	Top 50 Retail	Top 40 Transport	Top 75 Misc. Services	Top 40 Communications	Top 60 Wholesale	Top 25 Co-ops	Top 30 Construction.	Total	Percentage of Total	Percentage Foreign
1	Toronto	30545 (8298)	1304 (279)	10641 (6415)	8211 (425)	7732 (6951)	684	1209 (544)	60326 (22912)	34.8	38.0
2	Montreal	9286 (65)	24771	2379 (1460)	13201	1090 617	2914	2128 (1790)	55769 (3932)	32.2	7.1
3	Winnipeg	9117 (3547)	572	5733 (357)	321	3959 (1904)	1896	63	21661 (5808)	12.5	26.8
4	Vancouver	1488 (314)	614	2562 (1525)	78	4496 (913)	341	2110 (2110)	11689 (4862)	6.7	41.6
5	Calgary	146	854 (204)	261 (70)			2312	384	3957 (274)	2.3	6.9
6	Ottawa	76		3139	476				3691	2.1	-
7	Edmonton	201	458	66 (66)	978	497 (155)	260	1027 (59)	3487 (280)	2.0	8.0
8	Regina				383		2460		2843	1.6	0.0
9	Saskatoon			388			1572		1960	1.1	0.0
10	Hamilton		421	279		506 (506)		220 (220)	1426 (726)	0.8	50.9
11	Stellarton	755							755	0.4	-
12	Granby						721		721	0.4	-
13	Quebec City		48	198			189	102	537	0.3	-
14	London	122			294	106			522	0.3	-
15	Guelph			489					489	0.3	-
16	Drummondville					287			287	0.2	-
17	Kitchener			286					286	0.2	-
18	St. Jacobs	285							285	0.2	-
19	Halifax				282				282	0.2	-
20	Saint John				279				279	0.2	-

Table 5 (Cont'd)

Rank	City	Top 50 Retail	Top 40 Transport	Top 75 Misc. Services	Top 40 Communications	Top 60 Wholesale	Top 25 Co-ops	Top 30 Construction.	Total	Percentage of Total	Percentage Foreign
21	Moncton						269		269	0.2	-
22	Kingston		258						258	0.1	-
23	Cornerbrook							252	252	0.1	-
24	Rimouski						225		225	0.1	-
25	Sault Ste. Marie		195						195	0.1	-
26	Tillsonburg		169						169	0.1	-
27	Red Deer						163		163	0.1	-
28	Blenheim					158			158	0.1	-
29	Kelowna						140		140	0.1	-
30	New Glasgow						109		109	0.1	-
31	North Bay		105						105	0.1	-
32	Victoriaville						94		94	0.1	-
	Total Domestic	52021	29769	26424	24494	18831	14349	7495	173383	100.0	
	Total Foreign	12224	483	9893	425	11046		4723	38794		
	Percentage	23.5	1.6	37.4	1.7	58.7	0.0	62.2	22.4		

* Foreign control is recorded in parentheses.

Table 6
Top 64 Canadian Cities Controlling the Non-Financial Sectors of the Canadian Economy in 1984
(in millions of dollars of revenues)

Rank	City	Manufacturing	Services	Resources	Total	Percentage of Total
1	Toronto	88040	60326	40611	188977	45.1
2	Montreal	28247	55769	633	84649	20.2
3	Calgary	3705	3957	29123	36785	8.7
4	Vancouver	13376	11689	2857	27922	6.6
5	Winnipeg	624	21661		22285	5.3
6	Hamilton	5527	1426		9653	2.3
7	Ottawa	2918	3691	132	6741	1.6
8	Windsor	6589			6589	1.5
9	Kitchener	4096	286		4382	1.0
10	London	3429	522		3951	0.9
11	Edmonton	160	3487	158	3805	0.9
12	Regina	291	2843	160	3294	0.8
13	Saskatoon	429	1960	518	2907	0.7
14	Saint John		279	2120	2399	0.6
15	Sault Ste. Marie	1104	195		1299	0.3
16	Sarnia	1269			1269	0.3
17	Quebec City	556	537	85	1178	0.3
18	St. Catharines	1001			1001	0.2
19	Florenceville	847			847	0.2
20	Guelph	275	489		764	0.2
21	Cambridge	763			763	0.2
22	Stellarton		755		755	0.2
23	Granby		721		721	0.2
24	Halifax	404	282		686	0.2
25	Brockville	339			339	0.1
26	Brantford	339			339	0.1
27	Peterborough	302			302	0.1
28	Drummondville		287		287	0.1
29	St. Jacobs		285		285	0.1
30	Sydney	139		139	278	0.1
31	Moncton		269		269	0.1
32	St. John's	262			262	0.1
33	Kingston		258		258	0.1
34	Cornerbrook		252		252	0.1
35	Rimouski		225		225	0.1

Table 6 (Cont'd)

Rank	City	Manufacturing	Services	Resources	Total	Percentage of Total
36	Thetford Mines			217	217	0.1
37	Esterhazy	209			209	0.1
38	St. Georges Beauce	203			203	0.1
39	Duncan	187			187	-
40	Kingsley Falls	180			180	-
41	Victoriaville	86	94		180	-
42	Trois Rivieres	178			178	-
43	St. Thomas	170			170	-
44	Tillsonburg		169		169	-
45	Red Deer		163		163	-
46	Blenheim		158		158	-
47	Stratford	156			156	-
48	Barrie	155			155	-
49	Collingwood	154			154	-
50	Kelowna		140		140	-
51	Cranbrook	137			137	-
52	Norval	132			132	-
53	La Sarre	128			128	-
54	New Glasgow		109		109	-
55	Temiscaming	107			107	-
56	North Bay		105		105	-
57	Goderich	90			90	-
58	Brandon	86			86	-
59	Cornwall	74			74	-
60	St. Jean	73			73	-
61	Fort Erie	71			71	-
62	Orillia	70			70	-
63	Belleville	67			67	-
64	Prescott	60			60	-
65	Red Deer	58			58	-
66	Others	240			240	-
	Total	168098	173383	76753	418234	
	Percentage of Total	40.2	41.5	18.3		100.0

Development. Winnipeg ranks fifth with Hudson's Bay; Hamilton sixth, Dofasco; Ottawa seventh, Royal Canadian Mint; and Windsor eighth, with Chrysler. Other cities of importance that control the largest corporation in particular subsectors are Kitchener, Seagram; London, John Labatt; Edmonton, PCL Construction; Regina, Saskatchewan Wheat Pool; Saskatoon, Federated Co-operatives; and Saint John, Irving Group.

Figure 1 depicts the urban decision-making hierarchy for the largest twenty-five urban centres in the non-financial sectors. Urban hierarchies can be defined in a variety of ways (Kariel, 1984). This chart partitions Canada into three major decision-making regions, Central, West and East. The Central region is more than twice as large as either the West or East. Toronto stands at the apex of this national urban hierarchy and overshadows the truncated central region subhierarchy with its mature fourth level cities of Hamilton, Windsor, Ottawa, Kitchener and London, as well as, the fifth level centres of Sault Ste. Marie, Sarnia, St. Catharines, Guelph, Cambridge and Brockville. The eastern region has a dual hierarchical structure dominated by the declining second level centre of Montreal and the old fifth level centres of St. John, Quebec City, Florenceville, Stellarton, Granby, and Halifax. The western region is not dominated clearly by any one centre, except that Calgary appears to be a rising second level decision making centre with Winnipeg and Vancouver important at the third level. Edmonton, Regina and Saskatoon are rising third level prairie towns, while other centres in the decision making hierarchy have yet to appear in this young region.

Table 7 illustrates that Toronto-based financial, utility and real estate corporations account for over 44 percent of national assets, with Montreal in second place with just over 35 percent. Toronto ranks first in seven of the eight subsectors with corporations, such as: the Toronto-Dominion in banking; General Motors Acceptance, diversified finance; Ontario Hydro, utilities; Sun Life, life insurance; Royal Trust, trusts; and Cadillac Fairview, real estate development. Montreal ranks first in credit unions, Caisse Centrale de Desjardins; and is home to the Royal Bank and the Bank of Montreal, and the Caisse de dépôt et placement du Québec. Ottawa ranks third at 3.7 percent with such well known companies as Metropolitan Life, Campeau, Central Housing and Mortgage and Export Development Corp. Vancouver ranks fourth with 3 percent with corporations like Bank of B.C., Daon and B.C. Hydro. Other important financial centres include, Calgary, TransCanada Pipelines, Nu-West, and Trizec; Winnipeg, Great West Life; London, Canada Trustco;

Figure 1 Largest 25 cities controlling the non-financial sectors of the Canadian economy in 1984 in millions of dollars of revenues.

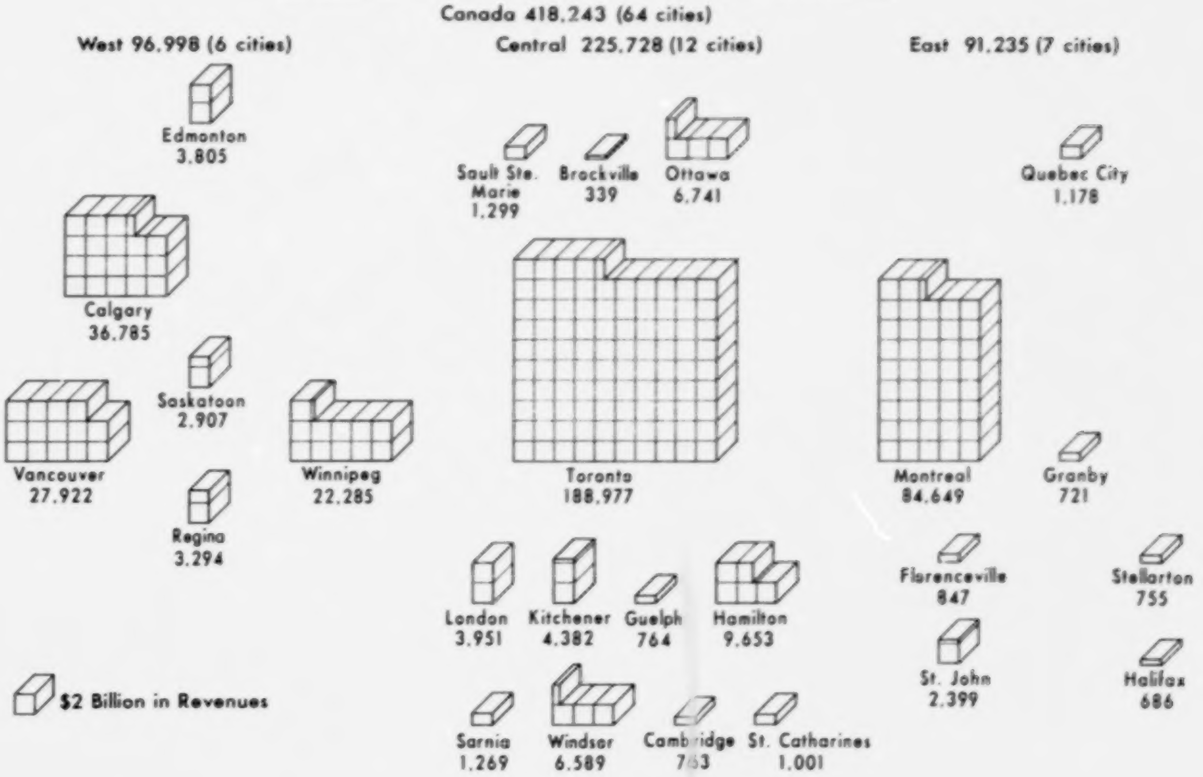


Table 7
Total Assets of Financial, Utility and Development Corporations in Canadian Cities in 1984 (in millions of dollars)*

		Top 70	Top 30	Top 25	Top 25	Top 20	Top 20	Top 40			
Rank	City	Banks	Diversified Finance	Utilities	Life Insurance	Trusts	Developers	Credit Unions	Total	Percentage of Total	Percentage Foreign
1	Toronto	201901 (18938)	31981 (6761)	30707	52113 (5627)	13557	21931 (567)	2139	354394 (31893)	44.1	9.0
2	Montreal	193862 (3161)	28605 (658)	27792	5488 (4399)	6355		19876	281978 (8218)	35.1	2.9
3	Ottawa		24065		3332 (3332)		2036	448	29881 (3332)	3.7	11.2
4	Vancouver	4418 (804)	3447	11219		514	1379	3009	23986 (804)	3.0	3.4
5	Calgary	1148		12365 (1050)		608	4537	753	19411 (1050)	2.4	5.4
6	Winnipeg		4383	4624	9066	170	652	129	19024	2.4	-
7	London		714 (714)		5654	11904	191		18463 (714)	2.3	3.9
8	Edmonton	3118	8188	1764		791	192	637	14690	1.8	-
9	Stratford					8224			8224	1.0	-
10	Kitchener				7572				7572	0.9	-
11	Halifax		461	1394	1353	2627	71		5906	0.7	-
12	Quebec City		3021		2080	356			5457	0.7	-
13	Regina			2583	367		205	1329	4484	0.6	-
14	Fredericton			2768					2768	0.3	-
15	St. John's			2441					2441	0.3	-
16	Chatham			1450					1450	0.2	-
17	Saskatoon					694		218	912	0.1	-

Table 7 (Cont'd)

Rank	City	Top 70 Banks	Top 30 Diversified Finance	Top 25 Utilities	Top 25 Life Insurance	Top 20 Trusts	Top 20 Developers	Top 40 Credit Unions	Total	Percentage of Total	Percentage Foreign
18	Hamilton		606 (606)					203	809 (606)	0.1	74.9
19	Victoria							417	417		
20	Barrie					340			340		
21	St. Catharines							228	228		
22	Lloydminster							199	199		
23	Chilliwack							175	175		
24	Steinbach							147	147		
25	Kelowna							140	140		
26	Trail			129					129		
27	Swift Current							127	127		
28	Red Deer							125	125		
29	Prince Albert							120	120		
30	Nelson							109	109		
31	Moose Jaw							87	87		
32	Charlottetown			81					81		
	Total Domestic	404447	105471	99317	87025	46160	31194	30615	804229	100.0	
	Total Foreign	22903	8739	1050	13358	-	567	-	46617		
	Percentage	5.7	8.3	1.1	15.3	-	1.8	-	5.8		

*Foreign ownership is recorded in parentheses.

Edmonton, Alberta Tel, Alberta Treasury Branches, and Canadian Commercial Bank; Stratford, National-Victoria and Grey Trustco; Kitchener, Mutual Life; Halifax, Central Trust and Nova Scotia Power; Québec City, Laurentain Group; Regina, Sask-Power and Sask-Tel; Fredericton, N.B. Power; St. John's, Nfld. Hydro; Chatham, Union Gas; Saskatoon, Co-operative Trust; and, Hamilton, International Harvester Credit Corp.

Figure 2 depicts the urban decision-making hierarchy for the largest twenty-five cities in the financial utility and real estate developer subsectors. This chart, like the previous one, partitions Canada into three major decision-making regions. The Central region controls over one-half the assets of the nation, the East over thirty-seven percent and the West, just over ten percent. Toronto, as in the non-financial sectors, stands first in the urban hierarchy and casts a long shadow over the third level centres of Ottawa and London; the fourth level, Stratford and Kitchener; and fifth level Chatham, Hamilton, Barrie and St. Catharines. Montreal, as a second level eastern financial centre, dominates a small group of level four centres. The most important of these is Halifax, followed by Québec, Fredericton and St. John's. The West has four, third level centres. The largest of these is Vancouver, closely followed by Calgary, Winnipeg and Edmonton. Regina is a fourth level financial centre, while of the remaining six, fifth level cities, Saskatoon is the most important.

Urban Dominance and Foreign Control

Dominance in the urban system is related to the degree of economic or business control which emanates from an urban centre. This control may be domestic or foreign. Table 8 indicates the relative levels of dominance held by the major metropolitan centres after foreign control has been isolated for both the non-financial and financial sectors of the economy. It is evident that Toronto holds a commanding position in the national economy. This position is put into perspective, however, when the level of foreign penetration is taken into account. As the table indicates, the proportion of Toronto's revenues accounted for by foreign firms, based in cities like New York, Detroit, Chicago, London, and Tokyo, is actually larger than domestic firms. Consequently, the largest urban revenue pool in Canada, Toronto (F) is foreign and over $111 billion. The real decisions and control of this pool of money are made offshore. Montreal, on the other hand, has a much smaller foreign component. The net result is that Toronto and Montreal are virtually equals in domestic control. This places a modified perspective on the question of which city is dominant. The foreign pools of revenue

Figure 2 Largest 25 cities controlling financial, utility and development sectors of the Canadian economy in millions of dollars of assets.

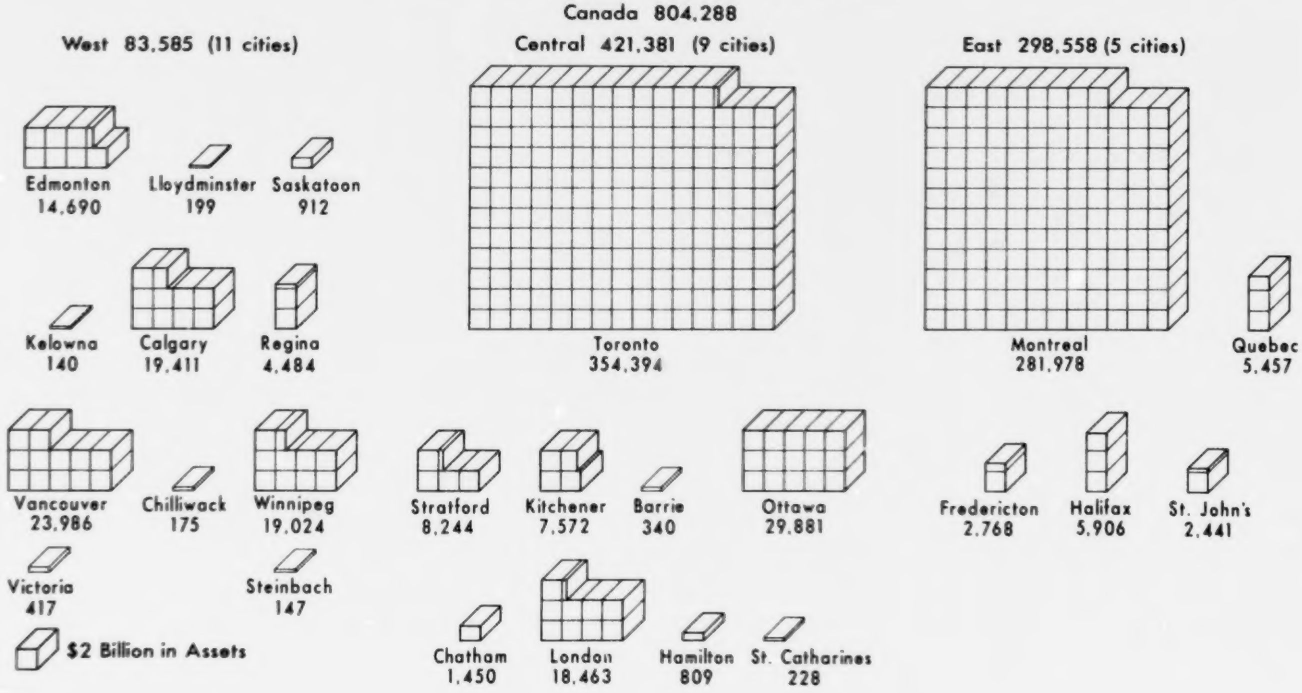


Table 8
Dominant Cities for the Canadian Urban System Ranked by their Control over the Non-Financial and Financial Sectors of the Canadian Economy in 1984

		Non-Financial Sectors[a]				*Financial*[b]	
Rank	City	Domestic	Foreign	Rank	City	Domestic	Foreign
1	Toronto (F)		111222	1	Toronto	322501	
2	Toronto	77755		2	Montreal	273760	
3	Montreal	71587		3	Toronto (F)		31893
4	Calgary	21658		4	Ottawa	26549	
5	Vancouver	19097		5	Vancouver	23182	
6	Winnipeg	16425		6	Winnipeg	19024	
7	Calgary (F)		15127	7	Calgary	18361	
8	Montreal (F)		13062	8	London	17749	
9	Vancouver (F)		8825	9	Edmonton	14690	
10	Windsor (F)		6514	10	Stratford	8224	
11	Ottawa	5958		11	Montreal (F)		8218
12	Winnipeg (F)		5860	12	Kitchener	7572	
13	Hamilton	5785		13	Halifax	5906	
14	Hamilton (F)		3868	14	Quebec	5457	
15	Kitchener	3821		15	Regina	4484	
16	Edmonton	3645		16	Ottawa (F)		3332
17	Regina	3294		17	Fredericton	2768	
18	London	3105		18	St. John's	2441	
19	Saskatoon	2643		19	Chatham	1450	
20	Saint John		2120	20	Calgary (F)		1050
21	Sault Ste. Marie	1299		21	Saskatoon	912	
22	Sarnia (F)		1269	22	Vancouver (F)		804
23	Quebec City	1178		23	London (F)		714
24	Florenceville	847		24	Hamilton (F)		606
25	London (F)		846	25	Victoria	417	
	Total Domestic	238097				755447	
	Total Foreign		168713				46617
	Percentage Foreign		70.9				6.2

[a] Controlled revenues in millions of dollars

[b] Controlled assets in millions of dollars

also complicate the question of overall domestic dominance. The nine largest foreign revenue pools led by Toronto (F), Calgary (F), and Montreal (F) are actually larger than the sixteen largest domestically controlled revenue pools. This is a sobering though. In the financial sector foreign controlled asset pools amount to only a little over 6 percent of the national total. The largest is again in Toronto.

Figure 3 reveals the imbalance of foreign control in the urban system for the resources, manufacturing and service sectors. Toronto accounts for over 66 percent of foreign revenues of the largest twenty-five centres in Canada. Note that the foreign presence in Calgary is now larger than in Montreal and the remaining cities of the East together. Figure 4 simply reinforces the fact that Toronto is the primary location of foreign controlled assets.

Crown Corporations

Crown corporations are a force in their own right in Canada. Both the provincial and federal governments play an active role in corporate decision making. These corporations may be used as instruments of government policy or may be run like any other private sector firms. Table 9 indicates that over $35 billion in revenues and $130 billion in assets are in the hands of the largest Crown corporations. The federal government controls almost 80 percent of the combined revenues of the resource, manufacturing and service Crowns, while the provincial governments control just over 80 percent of the assets of the financial and utility Crowns. The table shows that Montreal is the largest Crown corporation headquarters centre in the nation; it is the home of Air Canada, Canadian National and Hydro-Québec, among others. If, on the one hand, Crown corporations like these are run like any other private domestic businesses, then it is evident that the position of Montreal is dominant. If, on the other hand, real jurisdictional control over federal Crown corporations lies in Ottawa, and over provincial Crown corporations in the various provincial capitals, then the position of Montreal may be completely overshadowed. Table 9 shows the dramatic shift to Ottawa of dominance in the non-financial sectors with over $28 billion and to Québec City in the financial sectors with over $48 billion control. A comprehensive study dealing with real control and Crown corporate headquarters locations would give a more complete understanding of regional control in Canada.

Figure 3 Largest 25 cities of foreign control in the non-financial sectors of the Canadian economy in millions of dollars of revenues.

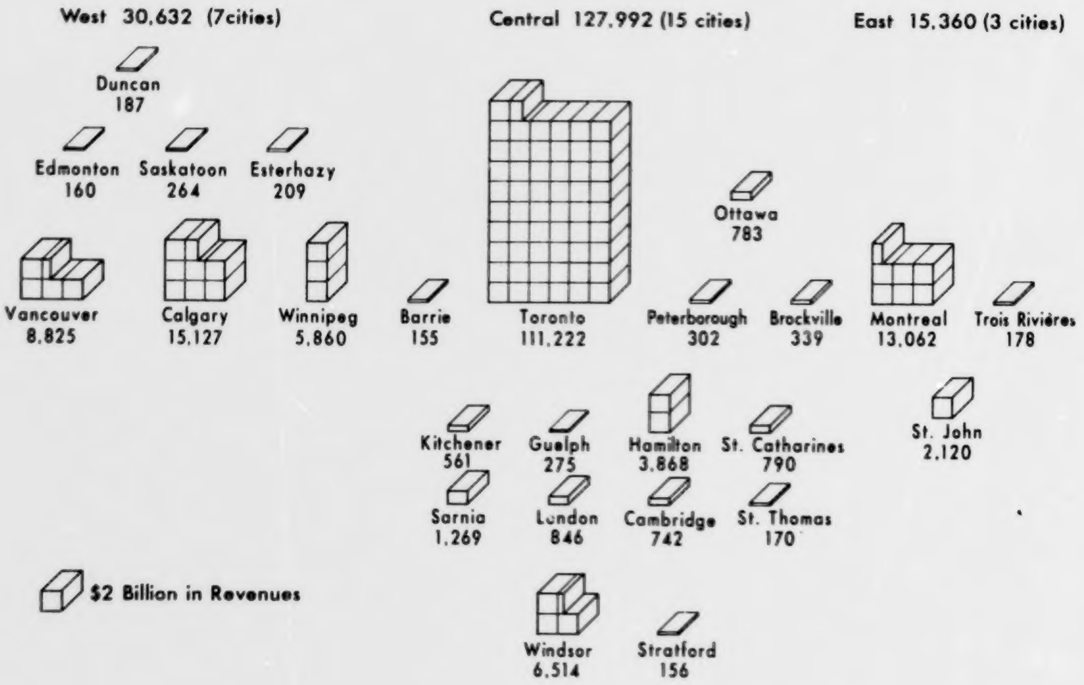


Figure 4

Largest 7 cities of foreign control in the financial, utility and development sectors of the Canadian economy in 1984 in millions of dollars of assets.

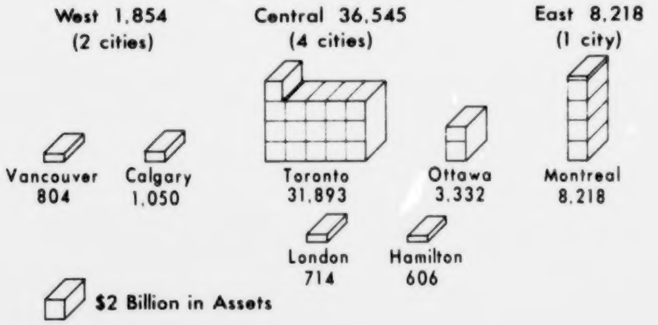


Table 9
Dominant Cities in the Canadian Urban System Ranked by their Control over Crown Corporations in the Non-Financial and Financial Sectors of the Economy 1984

		Non-Financial Sectors[a]						*Financial*[a]			
Rank	City	Provincial	Federal	Sub-Total	Jurisdictional Capital Total	Rank	City	Provincial	Federal	Sub-Total	Jurisdictional Capital Total
1	Ottawa		4515	4515	28672	1	Quebec			0	48512
2	Quebec City	85		85	1726	2	Toronto	28025		28025	28025
3	Victoria			0	1494	3	Ottawa		24065	24065	24065
4	Regina	834		834	1106	4	Victoria			0	9593
5	Edmonton	986	40	1026	986	5	Edmonton	9309		9309	9309
6	Halifax	686		686	686	6	Winnipeg	2934		2934	2934
7	Toronto	255	132	387	618	7	Fredericton	2768		2768	2768
8	Winnipeg	321	5191	5512	321	8	Regina	2583		2583	2583
9	Fredericton			0	279	9	St. John's	2106		2106	2106
10	St. John's		262	262	262	10	Halifax	1394		1394	1394
11	Charlottetown			0	0	11	Charlottetown	81		81	81
	Montreal	1497	9193	10690	0						
	Vancouver	1494	4180	5674	0		Montreal	48512		48512	0
	Calgary		4881	4881	0		Vancouver	9593		9593	0
	Saint John	279		279	0						
	Sydney		278	278	0						
	Saskatoon	272		272	0						
	Kingston	258		258	0						
	Thetford Mines	144		144	0						
	North Bay	105		105	0						
	Total	7216	28672	35888	35888			107305	24065	131369	131369
	Percentage of Total	20.1	79.9	100	100			81.7	18.3	100	100

[a] in millions of dollars in revenues and assets, respectively.

Regional Control

It is possible to calculate for each region, province and city of Canada domestic and composite indices of corporate control, which reflects a level of decision-making over and above its corresponding percentage of national population. The domestic index reflects the percentage of revenues or assets held by an area above or below what would be expected based upon population alone. The composite index consists of the domestic index minus the percentage of revenues or assets under foreign control.

Table 10, column one, indicates the proportion of population living within each of the regions, provinces and metropolitan areas of the country. Columns two and three list percentages of national revenues or assets controlled by all corporations by area. Columns four and five, the domestic control indexes, are calculated by subtracting the appropriate elements of column one from two and three respectively. Columns six and seven display the foreign controlled revenues and asset percentages in the hands of foreign corporations. Column eight and nine, the composite indexes, are calculated by subtracting columns six and seven from four and five respectively and represent a net surplus or deficit percentage of domestic and foreign control in a particular area. For example, Toronto contains 12.9 percent of the population of Canada and is the home of corporate head offices that control 45.1 and 44.1 percent of the national revenues and assets respectively. This means that Toronto-based corporations control 33.1 and 32.1 percent of additional revenues or assets than would be expected on size alone. However, 26.6 and 4.0 percent of national control located in Toronto is associated with offshore corporations. This foreign control reduces Toronto's net positive percentage to 5.6 and 27.2, respectively. Note that these figures are quite similar to Montreal's composite indexes of 5.6 and 22.6. These net positive indexes contrast sharply with the negative values of -1.1 and -2.4 for Vancouver, the largest western city. It is worth noting that most regions, provinces and urban centres in Canada have net negative composite indexes. This indicates that most corporate decisions for any particular area are being made elsewhere within the nation, or offshore. These indexes could be refined by shifting control of all Crown corporations to their respective political jurisdictional centre. Further refinement may be accomplished by looking at the problem of real versus perceived corporate control. For example, the Royal Bank and the Bank of Montreal are headquartered in Montreal, but a significant proportion of their overall decision making is carried out in

Table 10
Domestic and Composite Index of Regional Control*

Region Province, City	1 Population	Percentage Domestic 2 Revenues	3 Assets	Domestic Index 4 2-1	5 3-1	Percentage Foreign 6 Revenues	7 Assets	Composite Index 8 4-6	9 5-7
CENTRAL	35.6	54.3	52.4	18.7	16.8	30.6	4.6	-11.9	12.3
Ontario									
Toronto	12.9	45.1	44.1	32.2	31.2	26.6	4.0	5.6	27.2
Ottawa	3.0	1.6	3.7	-1.4	0.7	0.2	0.3	-1.6	0.4
Hamilton	2.2	2.3	0.1	-0.1	-2.1	0.9	0.1	-1.0	-2.2
St. Catharines	1.2	0.2	0.1	-1.0	-1.1	0.2	0.0	-1.2	-1.1
Kitchener	1.2	1.0	0.9	-0.2	-0.3	0.1	0.0	-0.3	-0.3
London	1.1	0.9	2.3	-0.2	1.2	0.2	0.1	-0.4	0.6
Windsor	1.0	1.5	0.0	0.5	-1.0	1.6	0.0	-2.1	-1.0
Sarnia	0.3	0.3	0.0	0.0	-0.3	0.3	0.0	-0.3	-0.3
Sault Ste. Marie	0.3	0.3	0.0	0.0	-0.3	0.0	0.0	0.0	-0.3
Guelph	0.3	0.2	0.0	-0.1	-0.3	0.1	0.0	-0.2	-0.3
Cambridge	0.3	0.2	0.0	-0.1	-0.3	0.2	0.0	-0.3	-0.3
Barrie	0.2	0.0	0.1	-0.2	-0.1	0.0	0.0	-0.2	-0.1
Chatham	0.2	0.0	0.2	-0.2	0.0	0.0	0.0	-0.2	0.0
Stratford	0.1	0.0	1.0	-0.1	0.9	0.0	0.0	-0.1	0.9
Brockville	0.1	0.1	0.0	0.0	-0.1	0.1	0.0	-0.1	-0.1
EAST	35.1	22.1	37.1	-13.0	2.0	3.7	1.0	-16.7	1.0
Quebec	26.0	20.8	35.7	-5.2	9.7	3.2	1.0	-8.4	8.7
Nova Scotia	3.5	0.4	0.7	-3.1	-2.8	0.0	0.0	-3.1	-2.8
New Brunswick	2.8	0.9	0.4	-1.9	-2.4	0.5	0.0	-2.4	-2.4
Newfoundland	2.3	0.0	0.3	-2.3	-2.0	0.0	0.0	-2.3	-2.0
P.E.I.	0.5	0.0	0.0	-0.5	-0.5	0.0	0.0	-0.5	-0.5
Montreal	11.5	20.2	35.1	8.7	23.6	3.1	1.0	5.6	22.6
Quebec City	2.3	0.3	0.7	-2.0	-1.6	0.0	0.0	-2.0	-1.6
Halifax	1.2	0.2	0.7	-1.0	-0.5	0.0	0.0	-1.0	-0.5
St. John's	0.6	0.0	0.3	-0.6	-0.3	0.0	0.0	-0.6	-0.3
Saint John	0.5	0.6	0.0	1.0	-0.5	0.5	0.0	0.5	-0.5
Fredericton	0.2	0.0	0.3	-0.2	0.1	0.0	0.0	-0.2	0.1
Granby	0.2	0.2	0.0	0.0	-0.2	0.0	0.0	0.0	-0.2
Stellarton	0.1	0.2	0.0	0.1	-0.1	0.0	0.0	0.1	-0.1
Florenceville	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.2	-0.0

Table 10 (Cont'd)

Region Province, City	1 Population	Percentage Domestic 2 Revenues	 3 Assets	Domestic Index 4 2-1	 5 3-1	Percentage Foreign 6 Revenues	 7 Assets	Composite Index 8 4-6	 9 5-7
WEST	29.3	23.6	10.5	-5.7	-18.8	7.3	0.2	-13.0	-19.0
British Columbia	11.4	6.8	3.1	-4.6	-8.3	2.2	0.1	-6.8	-8.4
Alberta	9.3	9.8	4.2	0.5	-5.1	3.6	0.1	-3.1	-5.2
Manitoba	4.2	5.4	2.4	1.2	-1.8	1.4	0.0	-0.2	-1.8
Saskatchewan	4.0	1.6	0.8	-2.4	-3.2	0.1	0.0	-2.5	-3.2
Yukon	0.1	0.0	0.0	-0.1	-0.1	0.0	0.0	-0.1	-0.1
N.W.T.	0.2	0.0	0.0	-0.2	-0.2	0.0	0.0	-0.2	-0.2
Vancouver	5.3	6.6	3.0	1.0	-2.3	2.1	0.1	-1.1	-2.4
Edmonton	2.8	0.9	1.8	-1.9	-1.0	0.0	0.0	-1.9	-1.0
Calgary	2.6	8.7	2.4	6.1	-0.2	3.6	0.1	2.5	-0.3
Winnipeg	2.4	5.3	2.4	2.9	0.0	1.4	0.0	1.5	0.0
Victoria	1.0	0.0	0.1	-1.0	-0.9	0.0	0.0	-1.0	-0.9
Saskatoon	0.7	0.7	0.1	0.0	-0.6	0.1	0.0	-0.1	-0.6
Regina	0.7	0.8	0.6	0.1	0.1	0.0	0.0	0.1	-0.1
Kelowna	0.3	0.0	0.1	-0.3	-0.2	0.0	0.0	-0.3	-0.2
Chilliwack	0.1	0.0	0.1	-0.1	-0.2	0.0	0.0	-0.1	-0.2
Lloydminster	0.1	0.0	0.1	-0.1	-0.2	0.0	0.0	-0.1	-0.2
Steinbach	0.1	0.0	0.1	-0.1	-0.2	0.0	0.0	-0.1	-0.2
CANADA	100.0	100.0	100.0	0.0	0.0	41.6	5.8	-41.0	-5.8

*All data are expressed as percentages.

Toronto (Semple, 1985; Semple, Green and Martz, 1985; Martz and Semple, 1985).

The Canadian Business Structure

Canada, in 1985, has a business structure in which a small number of elite corporations account for a largest proportion of the economic activity of every sector of the economy, and locate their headquarters in a few large urban centres of the nation. This combination of aggregate and spatial corporate concentration gives rise to a number of concerns. The concerns of aggregate concentration are well known, and only briefly summarized. The concerns of the spatial concentration of corporate activity are less well known.

Corporation Concentration

It may be argued that if a country has a low proportion of small firms, in particular, medium-sized firms relative to larger firms, then the large firms do not have a competitive stimulus from these smaller firms. This usually leads to poorer economic performance in many sectors with respect to innovation and cost reduction. Critics argue that aggregate concentration or the domination of the economy by giant corporations gives managers discretionary market power to fix prices, products and outputs. This form of monopolistic, or at least, oligopolistic power, produces inefficiency, high prices, inflated profits and a loss of general public welfare. On the other hand, it can also be argued, that enlargements of the population, income, wealth and markets, as well as the continuing advance of technology, have called forth organizations of increasing size to perform society's tasks. Large corporations, as well as labour unions, universities and governments, have continued to grow along with the economy. If society forces the dissolution of large corporate units, this may lead to a weakening of the structure that would otherwise produce economies of scale, enhance competition, expand markets and benefit consumers. Increasingly, in order to survive, business enterprises have become multi-plant, multi-product, multi-divisional and even multi-national.

Spatial concentration, like aggregate concentration, may give rise to the same types of concerns. The difference is that the impact is felt on a regional basis, as opposed to a particular sector of the economy. When markets are controlled by a small number of large firms located in a few areas of a country, and thus making difficult the entry of new firms, the way is open for regional monopolistic price and output policies. The most basic and best known type of spatial monopolistic policy is the regional price agreement. Discrimination in favor of large centrally located markets serves the purpose of giving these markets an advantage over those in more peripheral parts of the country. It is possible that centrally located corporations may institute policies of local price wars, local price cutting and restrictive practices in order to prevent new firms from getting a foothold, to drive out existing competitors, or to soften them up for a profitable merger.

Oligopolistic business can have an important effect both upon the regional distribution of income in a nation and upon the efficiency with which the economy operates. This implies that the receipts from spatially concentrated firms that benefit from such policies are higher than they would be under more competitive conditions, and that these higher receipts are mainly reflected in higher profits and in higher incomes of centrally located corporate executives. The benefits derived from spatial oligopolistic policies, both in the form of profit and in the form of executive salaries, therefore tend to increase the regional inequality of income distribution (Semple, 1977).

There are many social implications resulting from spatial concentration. A tiny firm has relatively little scope for influencing the technological, economic, political and social environment in which it operates. As a firm grows and as its size and power become more regionally concentrated, however, the range of aspects of the environment over which it can profitably exert an influence increases. Large firms find it worthwhile to spend considerable amounts on public and employee relations, to influence governments, educational institutions and the media.

Political influence can have a direct spatial impact. The function of influencing government activity is an increasingly important aspect of business policy. If concentration of business activity were low and business firms small, the exercise of political influence by business firms would not be in conflict with the principle of group organization to influence the democratic process. When, however, economic power is concentrated highly, both spatially and aggregatively, in large corporations, those in control of the corporations exercise political power far out of proportion to their number.

Public relations may also have a regional impact. Political influence is exerted not only directly but also indirectly by influencing the views of the electorate. Such influence is an important aspect of the increasingly important public relations activities of large corporations. Public relations activity has the objective of rendering the public sympathetic to the corporation concerned and to business in general, as well as to policies favoured by business groups. A great deal of the influence comes through the media and is directed to selling goods. The influential media, however, are highly concentrated in a few key regions of the country and may be used to diffuse policies favoured by large corporations.

There may also be a regional impact upon social services and education. Large corporations donate funds to universities and other institutions. These corporations, in turn, are usually well represented by the placement of staff on the governing boards of these universities, hospitals and charitable institutions. Naturally then, the activities of these institutions are influenced by the corporate values, and those institutions in close proximity to concentrations of corporate headquarters will be most affected.

There also evolves a spatial concentration of the power elite whose members are composed of a small group of directors affiliated with dominant corporations. These men and women hold a number of inter-locking directorships in the key businesses and financial institutions (Green and Semple, 1981). One feature of the economic elite in Canada is its direct and indirect linkage to Toronto and, to a lesser degree, to Montreal, two centres of economic power.

Foreign multinational corporations complicate an already complex situation.[3] They may be regarded with mixed feelings by officials of both the investing and the host countries. The problem arises because the multinational is associated simultaneously with several nations, owing obedience to their laws and paying taxes to their treasuries, yet having its own objectives and being responsive to top management that may be resident in another country. Indeed, multinationals may hold a monopolistic or oligopolistic position within major growth sectors of a host's economy and may locate their corporation headquarters in one or two key urban centres where their presence will be most visible (Semple, 1977).

The Contemporary Position of Canada

The basic problem faced by Canada in 1985 appears to be the need for domestic corporations to expand to the point where they can simultaneously serve the national interest and successfully compete in a multinational setting. That is, corporations in Canada have to be large enough to meet the costly demands of innovation, domestic and foreign competition, to overcome the disadvantages of serving a small and spatially dispersed national market and, at the same time, to run a successful business with an adequate level of profitability. These conditions imply that one way for Canadian corporations to meet contemporary challenges successfully is to expand until they achieve an oligopolistic market position within the domestic economy; then having achieved this position, they should be able to direct enough wealth and power to successfully protect themselves and the domestic market from foreign inroads and control. It appears that at least in the short run, the unique position of Canada will lend itself toward fewer and more geographically concentrated corporate locations. This spatial concentration will occur in the largest centres and as a result the existing corporate cities will play an ever more dominant role in the affairs of the nation.[4] A second trend will see foreign investment expand at an ever greater rate with investment taking place in the fastest growing sectors and subsectors. The investment will be directly by corporations with headquarters locations in the largest and most viable Canadian corporate centres. This will occur because foreign investors concentrate investment only in those sectors of the economy, and in those selected commercial centres, with the greatest economic advantages and political stability. A third trend will see larger and more diverse governmentally controlled provincial and federal Crown corporations. Federal Crown corporations will concentrate in those sectors of the economy where foreign control is too high, such as resources, or is too sensitive, such as communications or transportation. There will be a trend to locate corporate headquarters of Crown corporations away from Toronto, into regional centres and to partially privatize those operations that can compete in an international setting. Majority control will be maintained, however, in order to insure that the Crowns can be effectively used as instruments of governmental policy. Provincial Crown corporations will play an increasingly important role in regional oligopolistic market settings where sectors of a provincial economy are threatened. In the long run, some spatial decentralization of the largest domestic corporations seems inevitable. Some sectors such as textiles will disappear; others in high technology will be dominated by foreign corporations, which will continue to concentrate in Toronto. Crown corporations will decline in importance as the size, stability and maturity of the Canadian economy evolves. Deregulation will continue with advantages going to large domestic firms and some key foreign companies.

Notes

1. All data on the top corporations was obtained from current business publication, such as: *The Financial Post 500*, June, 1985; *The Financial Post Survey of Industrials and Mines and Energy Resources*, 1985; *Report on Business, 1000*, June, 1985; *The Globe and Mail; Financial Post; Financial Times;* and, *Canadian Business*.

2. For purposes of the present study, foreign control occurs when a single foreign major shareholder controls more than twenty-five percent of the voting stock. If voting stock owned by foreigners is widely held for investment purposes this study assumes Canadian control. Hence, Inco Ltd. of Toronto, with its widely held foreign ownership, is considered to be a Canadian controlled corporation.

3. See the discussion of multinational enterprises by Bonin and Verreault in Chapter 5 of this volume.

4. See the discussion of trends in the producer service and financial sectors by William Coffey in Chapter 3.

References

Green, M.B. and R. Keith Semple, 1981. "The Corporate Interlocking Directorate as an Urban Spatial Information Network". *Urban Geography*, 2,2:148-160.

Gorecki, P.K. and W.T. Stanbury (eds.), 1979, *Perspectives on the Royal Commission on Corporate Concentration*, Toronto: Butterworth.

Kariel, H.G., 1984: "Canadian Urban Hierarchies". *Canadian Geographer*, 28,4:383-390.

Martz, D.J.F. and R. Keith Semple, 1985, "Hierarchical Corporate Decision Making Structure Within the Canadian Urban System: The Case of Banking". *Urban Geography*, 6, 4.

Semple, R. Keith, 1973. "Recent Trends in the Spatial Concentration of Corporate Headquarters", *Economic Geography*, 49, 4:309-318.

______________, 1977, "Regional Development Theory and Sectorial Income Inequalities", In J. Odland and R.N. Taaffe (eds), *Geographical Horizons*, Dubuque, Iowa: Kendall-Hunt, 45-63.

______________, 1985, "Quaternary Place Theory: Toward a Spatial Model of Decision Making Activity", *Journal of Modeling and Simulation*, 16.

______________ and W.R. Smith, 1981, "Metropolitan Dominance and Foreign Ownership in the Canadian Urban System", *Canadian Geographer*, 25:4-26.

______________ and A.G. Phipps, 1982, "The Spatial Evolution of Corporate Headquarters within an Urban System", *Urban Geography*, 3:258-279.

______________ and M.B. Green, 1983, "Interurban Corporate Headquarters Relocations in Canada", *Cahiers de Geographie de Quebec*, 27:389-406.

______________, M.B. Green and D.J.F. Martz, 1985, "Perspectives on Corporate Headquarters Relocation in the United States", *Urban Geography*, 6,4.

Chapter 7:

The Regional Consequences of Free(r) Trade with the United States

William G. Watson

Introduction

Free trade with the United States has been on the Canadian agenda literally since before the country was born (Masters, 1981). Now in the mid-1980s, for reasons that are not entirely clear, it is again on the political agenda (Watson, 1986). For as long as Canada's trade policies have been debated, regional considerations have been paramount; and currently, in early 1986, there is reason to believe that this will also be true in the latest round of deliberations. Yet, in spite of the political and economic importance of this issue, very little is known about the likely consequences of free (or freer) trade with the United States for the different Canadian regions.

This collective neglect on the part of Canadian social scientists is not hard to explain. In the first place, the odds against a free-trade agreement with the United States, if not quite prohibitive, are certainly very high. The increasingly popular "public-choice" school of policy analysis places great emphasis upon the role of interest groups in the determination of policy; and since most of the more important Canadian interest groups have traditionally opposed free trade, many social scientists may have seen little reason to spend time analyzing a policy whose time they could reasonably expect would never come.[1] Moreover, assessing the regional impact of Canadian trade policy requires quite sophisticated "general equilibrium" analysis and, until the very recent development of techniques for solving complicated general equilibrium problems by computer, a satisfactory analysis simply was not possible. Such techniques do now exist, however (Harris and Cox, 1984; Whalley, 1985b), and if our ignorance in this area is not greatly reduced in the next few years, we will have only ourselves, or our funding agencies, to blame.

The purpose of this paper is to provide a brief, non-exhaustive summary of what has been done on this question and to make one or two informed estimates concerning the likely effects upon the Canadian regions of freer trade with the United States. To this end, inferences will be drawn both from studies that have examined the regional implications of trade directly and from those that have examined the general question of trade, but without making explicit reference to regionalism.[2] It should become clear as the discussion proceeds that there is a pressing need in Canada for the development of a regionally disaggregated general equilibrium trade model.

Are the Regional Consequences of Trade Policy Important?

Although political conflict over Canadian trade policies has often been organized along regional lines, at least some observers – most notably the Macdonald Commission – argue that the regional consequences of a free-trade agreement with the United States are not likely to be significant. Even strong supporters of the Commission's general position (such as myself) are unlikely to be convinced on this score, however.

In total, the Commission devotes only one and a quarter pages of its 185-page discussion of trade policy to the regional implications of free trade. In this page and a quarter (Volume I:330-1) it makes essentially three arguments. First, since Canadian labour is mobile, and since workers who suffer reduced wages or employment as a result of trade liberalization can move to other parts of the country, it is not obvious that new trading arrangements with the United States will have any direct effect on the welfare of people who live in specific regions. It may change the regions' relative sizes, of course, but so long as people can escape declining regions, wages in any area of Canada will not be that much different from wages elsewhere.[3] Second, since Canadian capital markets are well-developed, much regional capital is now owned outside of whatever region it operates in. Thus, even if trade were to hit (say) Maritime companies especially hard, many of the losers would be individuals and institutions who live in other parts of Canada. Finally, the effects of lower Canadian tariffs and lower American tariffs – and a new agreement obviously would involve both – are essentially opposite: if lower tariffs here tend to hurt Canadian manufacturers, lower tariffs in the U.S. tend to help them. To the extent that these effects offset one another, the impact of freer trade will be regionally neutral.

These arguments are naturally appealing to economists and it is therefore not surprising that a Commission whose judgments seem to have been dominated by economists should make them.[4] Moreover, they do have some merit. Factors *are* mobile and it is well to remember that even if free trade has few direct effects on a region's industries, it can have significant indirect effects insofar as it changes relative factor prices in the economy as a whole (Melvin, 1985). Thus even if a region produces mainly resource products – which currently enter the United States more or less tariff-free – it may nevertheless undergo substantial adjustment if, for instance, freer trade caused increased demand for manufacturing labour in other regions, and therefore put upward pressure on wages even in regions where manufacturing is not dominant.[5] The Commission's third argument, concerning the effects of reductions in U.S. trade barriers, is also useful to keep in mind. Too often analysis proceeds as if free trade meant unilateral trade liberalization on Canada's part, when in fact the main reason for Canadian tariff reduction is precisely to encourage similar reductions in the United States. This is not to deny that even unilateral tariff reduction by Canada would bring significant welfare gains; Harris and Cox (1984) estimate such gains at between 2 and 5 percent of Canadian GNP annually.

In the end, however, the Commission's treatment of the possible regional consequences of free trade is inadequate. Regional effects *are* important, and for several reasons. First, not all factors are mobile: especially labour, and most especially labour in Quebec – a fact to which Canadian governments can hardly be indifferent. Second, although in most regions much capital is owned out-of-region, a good deal is still owned in-region, often by provincial Crown corporations. In addition, most provincial governments have taken sizeable equity or debt positions in a significant portion of local investment, so that when the value of regional capital falls the brunt of the decline is borne by provincial taxpayers. Thus even if, in a new long-run, post-trade equilibrium, all factors were to earn the same return (net of mobility costs and non-pecuniary income) everywhere in Canada, in the movement to a new equilibrium some factors may have their prices rise and some fall, and the burdens on regions will vary in proportion to regional ownership of the different factors. Finally, at least some regional agents, most notably provincial and local governments, are unlikely to be indifferent to the size of regional populations and capital stock. It is small consolation to a provincial government that those of its taxpayers who move to other parts of the country will be better off as a result of trade liberalization than if they stayed in their province of origin. Of course, from the point of view of national "welfare-maximization" it may well make sense for the *federal* government, in deciding national trade policies, to discount the dissatisfaction of provincial governments, and to count Newfoundlanders who move to Toronto as a result of trade liberalization on the plus side in the cost-benefit analysis. But if provincial governments have any leverage over the federal policy process – and they certainly do, possibly even extending to a veto over it – then the federal government can hardly be indifferent to the regional impact of trade.

Thus there seems little doubt that the regional effects of free trade are likely to be important, and they are certainly worth studying. This is not to deny, however, what is perhaps the Macdonald Commission's most important message on the subject, namely, that these effects are not easy to calculate.

Consumption Effects of Freer Trade

The liberalization of trade can affect Canadian consumers in two ways. First, reduction of tariffs and non-tariff barriers gives them access to foreign goods at a reduced price. Second, competition from foreign producers will generally reduce the price at which Canadian producers sell goods, so that even domestically-produced output will be less expensive as a result of liberalized trade. This second effect will be especially important if Canadian industries either collude behind the tariff wall, or are unable to exploit the economies of large-scale production because of the small size of the Canadian market. In the case of collusion, increased trade means Canadian producers are no longer able to extract monopoly (or, strictly, oligopoly) profits from Canadian consumers; thus the reduction in trade barriers causes a transfer of cash from producers to consumers,with a (usually relatively) small net gain for the society due to the fact that consumers are now able to consume somewhat more of a certain good. In the case of economies of scale, however, the gain to consumers does not come mainly out of the pockets of producers: goods actually cost less to produce, so that the economy as a whole enjoys an increase in the quantity of output that can be produced with the resources at its disposal.

From a regional perspective, the interesting question is whether these consumption gains are shared equally across the country. At first blush it would seem that they should be. Most Canadians have similar patterns of consumption; Maritimers probably suffer more or less as much from quotas and tariffs on Japanese automobiles as people in British Columbia or Ontario do. True, there are differences in average income across the country, so that if goods consumed more intensively by low-income people – bottom-line clothing and textiles, for instance – are protected more than luxury items there may well be a regional difference in the incidence of the tariff. Unfortunately, while the cash cost of the tariff has been estimated on several occasions for the country as a whole (Pinchin, 1978; Young, 1958), consumption data generally do not allow reliable estimates of interregional differences in the incidence of the tariff.

It should be emphasized that this view of the consumption problem is at variance with the traditional view. The latter holds that the consumption costs of protection are much greater in the peripheral regions of the country, where industry generally is not highly protected, than in the centre of the country, where the bulk of the manufacturing sector is located. This simply is not true, however. People in Ontario and Quebec *also* pay inflated prices as a result of protection. Moreover, the revenues that the tariffs raises are presumably spent more or less evenly across the country, so that, in total, the pure consumption gains from freer trade are more or less uniform across the country.[6] The gains *will* be greater in the outlying sections of the country, however, if the cost of transporting protected goods from central Canada is appreciable, in which case domestic prices may well be higher in the outlying regions of the country than in the centre. Whether tariff reduction would have this differential impact depends upon whether or not transportation to the outlying regions is subsidized. In any case, the resources allocated to hauling such goods across the country are a pure loss to Canada, and trade liberalization will have the additional payoff of ending such waste (Melvin 1985a; 1985b).

Although the consumption costs of the tariff may be more or less equally shared across the country, the producers who receive the transfers from consumers obviously are not randomly distributed across the country. Many of the industries that benefit most from protection are located in Quebec and Ontario, so that for these two provinces the tariff-induced transfer between producer and consumer takes place within the region. This may or may not be politically significant: consumers in Ontario are hit just as hard by the tariff as consumers elsewhere. The only difference is that the beneficiaries of the cash cost of the tariff are more likely to be their neighbours (or, indeed, themselves, if they work in or have invested in a protected industry).

Calculations by Pinchin (1978) suggest that the interregional redistribution effected by the consumer-producer transfer does run along the lines traditionally assumed by Canadian politicians and social scientists; the net redistribution is from the outlying regions of the country to central Canada. To be precise, he calculates the gains to Quebec and Ontario at 0.90 percent and 1.11 percent of their respective provincial incomes, while the loss to the Maritimes is 1.97 percent; the Prairie provinces 2.14 percent; and to British Columbia 2.11 percent. Thus, just as the traditional view would have it, trade liberalization would favour the periphery and would impose appreciable income costs on central Canada.

Production Effects: the Old View

The previous section discussed the regional distribution of the cash transfer effected by the tariff. In addition, the tariff is widely thought to have caused the allocation of productive resources across the Canadian landscape to be different from what it would be under a regime of free trade. To be precise, the traditional view is that the tariff has given the country a larger manufacturing sector than it would otherwise have and, since the supply of factors of production – particularly labour – is not infinitely elastic, it has thereby reduced the importance of resource-based, mainly extractive activity. It follows naturally that trade liberalization is likely to work in the opposite direction, namely, to discourage manufacturing and to increase the importance of resource extraction and processing. Given the current geographic distribution of industry this is most likely to boost economic activity in the periphery, including the northern parts of Ontario and Quebec, largely at the expense of the industrial heartland.

A good deal of work does point to this conclusion. In the study discussed in the previous section, Pinchin (1978) calculates the allocative effects of tariff reduction in the following way. In the absence of precise estimates by industry, he assumes that the elasticity of supply in all industries is one percent. This means that a one percent reduction in the market price of whatever good is being examined will cause a one percent reduction in the supply of such goods by Canadian producers, and thus a one percent reduction in their demand for labour and other factors of production. Using customs data on the extent of protection in order to determine the likely percentage reduction in prices in each Canadian manufacturing industry after free trade, he then sums across all industries to find the likely percentage reduction in manufacturing output. His conclusion is dramatic: employment in manufacturing would fall by as much as 13.9 percent nationwide if the tariff were eliminated, and it would fall by as much as 16.9 percent in Ontario and by as much as 12.9 percent in Quebec.

Pinchin's analysis is fine so far as it goes. But in economic terms it is fundamentally flawed by being only a "partial equilibrium" analysis. True, it does take into account the effects of tariff reductions on all industries, and it even allows for inter-industry effects by looking at the effects of changes in intermediate goods prices on the price of final goods produced in Canada. But it remains only a partial equilibrium analysis because it does not model the full economic consequences of tariff reduction. Most importantly, it does not try to predict what, if any, change would take place in factor prices (i.e., the prices of capital and labour) as a result of changing output patterns. For instance, the situation described above, in which as many as 160,000 Canadian manufacturing workers lose their jobs after free trade, simply could not be sustained indefinitely. The Canadian labour market is far from perfect, but eventually unemployed labour would be absorbed into other industries. In a *general* equilibrium analysis the effects of this amount of labour absorption by other industries would be allowed for. And so, too, would the effects of capital absorption, since the contraction of vulnerable industries would also release capital that eventually would be re-employed elsewhere. Even if existing capital cannot be moved from industry to industry – which may well be the case in many, if not most, instances – changing patterns of final demand will alter both the pattern and the scale of the demand for new capital goods.

Pinchin obviously recognizes that the massive increases in unemployment that he predicts could not be permanent and he therefore allows for movement back to full employment. The mechanism by which this takes place, however, is a change, not in the prices of labour or capital, but in the exchange rate. More precisely, he calculates that a 10 percent reduction in the exchange value of the Canadian dollar would offset most of the adverse employment effect. Unfortunately, he is not able to control fully for the after-effects of devaluation on the *pattern* of output and employment. Since different industries use different proportions of capital and intermediate goods, such effects may well be important. The inability to deal fully with feedback effects of this sort is an unavoidable drawback of the partial equilibrium method, however.[6]

In a similar exercise performed at roughly the same time as Pinchin's, Dauphin (1978) uses data on the "effective rate of protection" in 110 Canadian industries. The effective rate of protection is the net rate of protection on an industry's output, taking into account the "negative protection" or "antiprotection" arising from the fact that the industry's inputs may themselves be over-priced because of protection. Even industries with very high statutory rates of protection may not be "effectively protected" if they must pay inflated prices for protected inputs. This concept enables him to determine how great a decline in wages would be required in each industry in order to meet price competition from the U.S. if tariffs were removed. He concludes that if average Canadian income increased by 2 percent as a result of unilateral free trade, the increase in real income would be much as 4.49 percent in the Atlantic Region, 3.88 percent in the Prairies, and 3.82 percent in B.C., but only 0.70 percent in Quebec and 0.91 percent in Ontario. Again the traditional conclusion that protection helps central Canada, and Quebec in particular, is confirmed. But, again, it should be remembered that Dauphin's analysis, like Pinchin's, is a partial equilibrium analysis and cannot hope to capture the full effects of movement to a new free-trade equilibrium.

The purpose of this section has not been to savage Pinchin's or Dauphin's work; they take partial equilibrium methods about as far as they can go on this question, and at the time of their studies general equilibrium methods were not easily tractable. Rather, the purpose here has been to suggest that if a full understanding of the consequences of free trade is to be achieved, a truly general equilibrium analysis – in which all prices are free to vary and all feedback effects are taken into account – is necessary.[7]

A General Equilibrium Trade Model

One of the first attempts to model Canadian trading patterns using general equilibrium techniques is Boadway and Treddenick (1978). In fact, their model examines the effects both of tariff and tax removal on the structure of Canadian economic activity, and by distinguishing as many as 59 separate sectors it allows them to do this at a significant level of detail. As suggested, a clear advantage of their approach, compared to Pinchin's, is that factor returns can vary. In practice, of course, the real interest rate faced by Canadians is set on world markets and is not likely to change as a result of anything that Canada does. But the *relative* price of capital (summarized by economists in the "wage rental" ratio) *can* change and is a crucial determinant of the distributional and allocative effects of trade liberalization. Moreover, even if, as turns out to be the case in Boadway and Treddenick's work, the wage-rental ratio does not change all that much between the tariff and non-tariff equilibrium, this can still have significant effects on the pattern of economic activity. The way the model works is that the interest rate *tries* to change, as it were, but since final equilibrium is constrained by the fact that, in the end, the Canadian interest rate must equal the world interest rate, important changes may have to take place in the way capital and labour are allocated across the economy in order that this constraint hold.

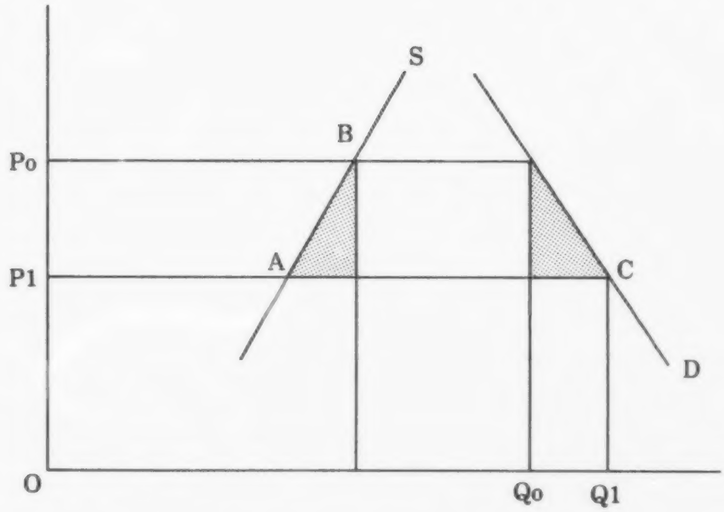
Among the other features of Boadway and Treddenick's model is its (crucial) assumption of "constant returns to scale", which means that if output in an industry is to be doubled, all factor inputs must be doubled. This is to be contrasted with "increasing returns to scale", assumed by Harris and Cox (see below), in which greater output can be obtained with a less than proportionate increase in at least some inputs. With increasing returns to scale, higher levels of output obviously mean greater economy in inputs, and at least the possibility of significant net gains for a country if it can increase the output of those industries in which increasing returns to scale are important. This, in a nutshell, is the basic argument for free trade in a small economy like Canada. Of course, Boadway and Treddenick's assumption of *constant* returns to scale suggests that there is no great premium for Canada on increases in output, nor any great loss from reductions in output. It is this assumption, in the main, which produces their central result, which is that removing tariffs leaves Canadian welfare more or less unchanged.

In fact, in their model, reducing tariffs sometimes causes a *reduction* in welfare, a result that obviously runs contrary to the usual economic proposition that countries prosper most when they pursue their comparative advantage, which is best revealed to them under a system of free trade. Boadway and Treddenick's perverse results stem from two sources. First, their tariff-removal experiment takes place in an economy that is subject to other forms of taxation. It is a standard result in economics that, in the presence of distortions elsewhere in the economy, departures from normal rules about freely-determined market prices are often optimal. This is the infamous "theory of the second best". Second, Boadway and Treddenick assume at times that foreigners' demands for Canadian goods are price-inelastic. What this means is that the cut in Canadian prices forced by the tariff reductions does not greatly increase the quantity of Canadian goods sold abroad, so that overall export revenues decline, and with them, social welfare. Like the monopolist who reduces prices too far, we get less revenue from a given level of output than we used to. There is reason to doubt the realism of this assumption, however. Many Canadian goods are thought to be sold on markets where demands are very elastic indeed, so that a slight reduction in Canadian prices in fact would lead to a large increase in sales of foreigners. When significant price elasticity *is* assumed, then eliminating tariffs does lead to an increase in overall welfare, even in the presence of taxes. These gains are not large, however; in general they are less than one percent of GNP.

This result that cutting tariffs does not cause much of an increase in welfare is not especially surprising to welfare economists – not surprising given Boadway and Treddenick's assumption, that is. In fact, it is simply an example of a popular result in welfare economics, the shorthand version of which is that "with constant returns to scale all triangles are small". Figure 1 may help illustrate just what this means. With a tariff-protected price of Po, domestic supply curve S, and demand curve D, the effect of trade liberalization is to shift the effective supply curve from PoBS to P1AS. The gain to society is the sum of the two shaded triangles. The left-hand triangle represents the saving of domestic resources when production is undertaken – more efficiently – by foreigners, while the right-hand triangle represents the increase in "consumers' surplus" enjoyed by domestic consumers, who are now able to consume QQ1 of the good rather than OQo. Unless the tariff is a large percentage of the world price and/or the elasticities of domestic demand and supply are very large, these triangles will be a small percentage of the area OP1CQ1, which is total domestic consumption of the good. On the other hand, if tariff removal alters the conditions of domestic supply, so that producers can produce output more efficiently than formerly, then the possibility of significant increases in social welfare arises. That is precisely the difference between studies like Boadway and Treddenick and Harris and Cox (see below).

Since Boadway and Treddenick's model is not explicitly regional their results are not of direct help in determining the regional impact of tariff reduction. Their model does produce industry-by-industry results, however, and, in principle at least, if several cavalier assumptions are ventured, inferences *can* be drawn about the regional impact of liberalization. In practice, however, Boadway and Treddenick's results do not allow for easy inference. The main problem is that these results are neither pronounced nor consistent. For instance, assuming world elasticities of demand for Canadian products equal to 1.0, the removal of tariffs causes the wage/rental ratio to fall slightly (i.e., tariffs protect labour-intensive industries); on the other hand, when the elasticity of demand is assumed to be large the wage/rental ratio rise slightly as tariffs fall (i.e., tariffs protect capital-intensive industries). But in neither case is the change in overall welfare greater than one percent in absolute value. As far as the industrial pattern of protection is concerned, Boadway and Treddenick conclude tentatively – and surprisingly – that the tariff tends to discriminate slightly against primary industry and manufacturing, and in favour to tertiary industries, where output and employment levels fall slightly as tariffs are removed. The effect on primary industries depends very much upon the elasticity of demand for Canadian output, however. With high elasticities, the damping effects of tariffs are reduced. Boadway and Treddenick's results are not strong, but even a weak result that runs counter to the traditional model is interesting. In this respect it should also be noted that the Maritime provinces have relatively high levels of service employment, presumably because

Figure 1
Constant Returns to Scale



of the greater importance of government activity in these provinces, and that they therefore stand to be hit – albeit mildly – by freer trade.

Of all Boadway and Treddenick's results, however, the most important by far is that the tariff does not appear to distort the pattern of economic activity in Canada, nor, therefore, to impose significant welfare losses on Canadians. That they obtain this result is not surprising given their assumptions about technology. But it may shock anyone who has observed the energy with which Canadians have debated the question of tariffs over the decades.[8]

Production Effects: The "New View"

Different assumptions obviously produce different results. Over the last 25 years or so an alternative view of the likely effects of freer trade on Canadian industrial activity has emerged, this one based upon the twin assumptions of increasing returns to scale and imperfect competition. Increasing returns to scale obviously means that there are cost advantages to large-scale production. There are several ways of modelling this process. One popular version – which is of interest here because it is adopted by Harris and Cox (1984) whose work is discussed below – is that production processes involve fixed costs, so that even if variable costs such as labour and materials do not decline with increases in output, total per unit costs do fall. These fixed costs can be thought of as set-up or tooling costs, organizational costs, advertising costs, R&D costs, or simply plant and equipment costs. Since the pathbreaking work of Eastman and Stykolt (1967) a great deal of attention has been paid by Canadian specialists in industrial organization to the special difficulties posed by such costs – particularly those associated with short production runs – for Canadian manufacturers.

Of course, if scale economies *are* as important as many Canadian economists believe, then it would seem to follow naturally that access to the U.S. market would bring big payoffs in terms of both lower unit costs and, from the point of view of the economy as a whole, the possibility of increased output from the country's stock of factors of productions. Unfortunately, this does *not* follow automatically. Most studies of scale economies suggest that although such effects are important in many industries, in a large number of cases economies in plant size seem to be fully exhausted at levels of output well *below* the capacity of the domestic Canadian market. In other words, in many industries there does seem to be room in Canada for at least one or two – and possibly even more – producers operating at efficient scale. Thus some explanation must be found as to why a very few large Canadian operations do not grow to the point at which such economies can be exhausted. The literature's most common explanation is that competition in Canada is imperfect: either tacitly or explicitly, firms simply decide not to compete. In many cases, it is argued, this occurs mainly because most firms are American and inherit an oligopolistic industrial structure from their parents.

The tariff *is* crucial to this argument, of course; it is tariff protection that permits producers the luxury of choosing whether or not to compete actively. That, in many cases, they appear not to compete helps to explain why many of our manufacturing industries are over-populated with small-scale firms producing an excessively wide range of products and using inefficient techniques to do so. Ironically, excessive entry often leads to capital-labour ratios that are *higher* than is observed elsewhere, especially in the United States. But because production runs are too short, output per worker is *lower* than elsewhere. In this context the virtue of free trade is that it brings down domestic prices and forces rationalization in precisely those industries where economies of scale are important. As a result of such rationalization, many Canadian industries are likely to be better placed to compete on world markets. Not surprisingly, analyses along these lines have given rise to very generous estimates of the likely payoff to Canada of freer trade, especially freer trade with the United States. In 1967, the Wonnacotts put the potential gain from bilateral free trade with the U.S. at 10.5 percent of Canadian GNP.

The latest major contribution in this analytical tradition is the (by now famous) work of Richard Harris and David Cox (1984). Harris and Cox's signal contribution to the literature has been to construct a general equilibrium model that embodies the twin assumptions of increasing returns and imperfect competition. Their model distinguishes 29 industries, 9 primary and 20 in the manufacturing sector. The primary sector is assumed to operate under conditions of constant returns to scale, while the manufacturing sector experiences increasing returns to scale (to a degree determined by recent econometric estimates). The increasing returns assumption is embodied in the analysis by assuming that firms have both fixed costs and variable costs, with variable costs per unit being constant over the full range of output and equal across firms, while fixed costs are identical for all firms. In short, all firms in an industry are identical. With a fixed number of firms, industry fixed costs are constant while total costs per unit decline as output increases. The number of firms is determined by profits and entry; firms enter the industry until no firm is making more than the going rate of return on investment (which is equal to the world interest rate). Tariff reduction forces a reduction in industry fixed costs by lowering the number of firms that can compete at new, lower prices.

Imperfect competition enters the model through assumptions about pricing. Industry prices are higher than they would be under competition; this encourages entry, which raises fixed costs (and therefore total costs per unit of output) to higher than competitive levels. The actual pricing behavior of firms is taken to be a combination of "Eastman-Stykolt pricing" (1967), under which Canadian firms charge the world price plus the Canadian tariff, and standard oligopoly pricing, under which markups over costs are inverse to the elasticity of demand (i.e., where demand is very price-sensitive the mark-up is low, while where it is *not* sensitive the mark-up is high). Under Eastman-Stykolt pricing the effects of tariff reduction are unambiguous: prices fall by the extent of the tariff reduction. Under oligopoly pricing, however, the change in the domestic price depends on what happens to the overall elasticity of demand as a result of the tariff change. It is even possible, if foreign demands for Canadian goods are not as price sensitive as domestic demands, that prices will *rise* as a result of trade liberalization, although this is an anomalous case.

As mentioned, Harris and Cox's model is not regionally based. Assuming that the impact of trade liberalization on a given industry is the same wherever it is located, however, the model can be used to say something about how the different regions will be affected by tariff reduction. This assumption of regionally neutral impacts is heroic, of course, but in the absence of a regionally-based model there is no other alternative. And, since some sectors operate almost exclusively in one or two regions of the country, this method may lead to results that are not too inaccurate.

Tables 1 to 4 summarize the results of just such an exercise.[9] To begin with Table 1, the first three columns show the share of regional manufacturing value-added accounted for by each of Harris and Cox's 20 manufacturing industries. Unfortunately, data are available only for three regions—Ontario, Quebec, and B.C.; since value-added in several manufacturing industries in the Prairies and Atlantic Canada is so sparse, Statistics Canada cannot publish relevant data without violating rules of confidentially. The table's fourth column shows the proportional change in industry value-added that Harris and Cox calculate would take place under a regime of multilateral free trade. The biggest gainers are transportation equipment, paper and allied products, and – perhaps surprisingly – textile products. In fact, despite the popular impression of textiles as a "soft" industry, many parts of it are capital-intensive and subject to increasing returns; most imports of synthetics come, not from Southeast Asia, but from Europe and the United States. The major losers are tobacco, leather products, furniture and fixtures, and knitting mills, which have all generally been thought to be in trouble for some time.

The final three columns of Table 1 show the various industries' shares in total manufacturing employment *after* the move to multilateral free trade. Although the columns actually sum to 100, the numbers shown opposite "Total" are index numbers of overall manufacturing value-added. These are obtained by multiplying the original shares by 1 plus the entry in column 4, and summing the resulting products. The numbers in the right-hand columns are obtained by dividing each product by this total. Thus for Quebec for food and beverages 14.1 x (1-0.05), all divided by 120.8, equals 11.1. The industry results show that transportation equipment and paper and allied products together account for almost 28 percent of Quebec's manufacturing value-added after the change, while transportation equipment alone accounts for almost a quarter of Ontario's. But what is most surprising is the result for the manufacturing sector as a whole. Manufacturing value-added increases by 20.8 percent in Quebec, 22.4 percent in Ontario, and 21.9 percent in British Columbia. This result follows directly from the assumption of increasing returns in manufacturing: when efficiency increases with high levels of output, access to large markets is crucial to productivity (and therefore to income). But this obviously flies in the face of the conventional view of the tariff's allocative effect. In this new view, the tariff effectively *discourages* manufacturing, an industry in which Canada actually has a comparative advantage. These results also give rise to a political puzzle: for, rather than oppose free trade, as it has done so far, Ontario – and especially Ontario manufacturers – should be strongly supportive of it.

Tables 2, 3, and 4 serve mainly to confirm these results. Table 2 does for regional employment what Table 1 did for value-added. Although the regional pattern of change is somewhat different, the result that free trade is good for manufacturing is confirmed. Each of the three provinces experiences roughly a ten percent increase in manufacturing employment, an increase large enough, in fact, to raise wages for the economy as a whole.

Table 1
Free Trade's Effects on Regional Value-added in Manufacturing

Industry	Current (1982) share of regional value-added			Proportional change in value-added resulting from multilateral free trade	New share of regional value-added		
	Quebec	Ontario	B.C.		Quebec	Ontario	B.C.
Food & beverages	14.1	12.7	16.1	-.05	11.1	9.9	12.6
Tobacco products	2.1	.8	--	-.18	1.4	.6	--
Rubber & plastics	2.4	3.4	1.0	.24	2.4	3.4	1.0
Leather products	1.2	.7	--	-.27	.7	.4	--
Textiles	4.1	2.5	.5	.63	5.5	3.3	.7
Knitting mills	1.2	.4	--	-.21	.7	.2	--
Clothing	6.3	1.5	1.0	.22	6.4	1.5	1.0
Wood products	3.3	1.4	19.9	-.03	2.6	1.1	15.8
Furniture & fixtures	1.9	1.9	1.0	-.30	1.1	1.1	.6
Paper & allied products	11.1	5.1	17.3	.78	16.4	7.4	25.3
Printing & publishing	5.6	5.7	5.4	.28	6.0	6.0	5.7
Primary metals	6.4	7.2	6.4	.21	6.4	7.1	6.3
Metal fabricating	7.2	8.2	6.6	.10	6.5	7.4	6.0
Machinery	4.1	6.6	3.5	-.13	3.0	4.7	2.5
Transportation equipment	6.8	14.4	4.9	.98	11.2	23.3	8.0

Table 1
(Continued)

Industry	Current (1982) share of regional value-added			Proportional change in value-added resulting from multilateral free trade	New share of regional value-added		
	Quebec	Ontario	B.C.		Quebec	Ontario	B.C.
Electrical products	6.6	9.1	1.8	-.08	4.5	6.9	1.4
Non-metallic mineral products	2.5	2.6	4.2	.11	2.3	2.4	3.9
Petroleum & coal	2.8	2.2	5.7	.16	2.7	2.1	5.4
Chemicals & chemical products	7.7	9.0	3.3	.16	7.4	8.5	3.1
Miscellaneous manufacturing	2.4	4.2	1.5	-.20	1.3	2.8	1.0
Total	100.0	100.0	100.0		120.8	122.4	121.9

Sources: Statistics Canada 31-203 *Manufacturing Industries of Canada: National and Provincial Areas;* Harris and Cox (1984: Table 13).

Note: New shares actually total 100 per cent. Entry under "Total" is an index of value-added for the manufacturing sector.

Table 2
Free Trade's Effects on Employment Shares in Manufacturing

Industry	Current (1982) share of provincial employment			Proportional change in employment resulting from multilateral free trade	New share of provincial employment		
	Quebec	Ontario	B.C.		Quebec	Ontario	B.C.
Food & beverages	11.6	10.2	13.0	-.05	9.8	8.7	11.3
Tobacco products	.9	.4	.1	-.14	.7	.3	.1
Rubber & plastics	2.7	4.2	1.2	.13	2.8	4.2	1.3
Leather products	2.0	1.4	--	-.36	1.2	.8	--
Textiles	5.7	3.2	.8	.49	7.6	4.3	1.1
Knitting	2.1	.8	--	-.25	1.4	.5	.5
Clothing	11.3	2.9	2.0	.03	10.4	2.7	1.9
Wood products	4.9	2.2	28.6	-.09	4.0	1.8	23.7
Furniture & fixtures	3.2	3.0	1.6	.39	3.9	3.8	2.0
Paper & allied products	8.9	5.2	13.4	.63	13.0	7.6	19.9
Printing & publishing	5.3	6.4	6.3	.11	5.2	6.4	6.4
Primary metals	5.7	7.9	6.0	.13	5.7	8.0	6.2
Metal fabricating	6.9	9.3	6.8	-.03	6.0	8.1	6.0
Machinery	3.9	6.6	4.1	-.25	2.6	4.5	2.8
Transportation equipment	7.3	12.2	5.5	.76	11.5	19.3	8.8

Table 2
(Continued)

Industry	Current (1982) share of provincial employment			Proportional change in employment resulting from multilateral free trade	New share of provincial employment		
	Quebec	Ontario	B.C.		Quebec	Ontario	B.C.
Electrical products	6.0	9.1	2.4	-.20	4.3	6.5	1.7
Non-metallic mineral products	2.4	2.7	3.1	.04	2.2	2.5	2.9
Petroleum & coal	.8	1.4	.9	-.01	.7	1.3	.9
Chemicals & chemical products	5.1	6.1	2.1	.06	4.8	5.8	2.0
Miscellaneous manufacturing	3.1	4.7	2.1	-.30	2.0	3.0	1.4
Total	100.0	100.0	100.0		111.7	111.5	109.7

Sources: Statistics Canada 31-203 *Manufacturing Industries of Canada: National and Provincial Areas;* Harris and Cox (1984: Table 13).

Note: New shares actually total 100 per cent. Entry under "Total" is an index of total manufacturing output after the change.

Table 3 uses the method of Tables 1 and 2 to predict the effects of multilateral trade liberalization on regional gross domestic product (GDP) by sector. This time the level of aggregation is great enough so that data are available for all provinces. The results of this exercise are more or less what would have been expected on the basis of Tables 1 and 2. With a relative increase in the price of labour, capital-intensive sectors—especially agriculture and the resource industries—expand substantially, while construction and "Other" (mainly service sector industries) grow only modestly. Because of the rapid, if not entirely credible growth of agriculture and mining, which are already important in the Prairies, GDP actually increases most rapidly in that region. On the other hand, every region of the country experiences an increase of GDP of at least 13.5 percent, which suggests that even if the numbers are exaggerated there is the distinct possibility that free trade is a game in which no region loses.

Table 4 performs a similar exercise for employment shares. The only difference of note is that the gross increase in employment is not as large as the increase in output, but, of course, this is just what would be expected if freer trade did lead to greater productivity in manufacturing.

In brief, this use of the Harris and Cox results suggests that a move to freer trade may not involve greatly different impacts across regions and, in spite of the predictions of the more traditional approach, may produce net production gains in all regions. The obvious difficulty in drawing this inference from the data is that the impact of trade liberalization *within industries* may well vary across regions. For instance, if the central regions of the country were better able to take advantage of the economies of large scale production, then freer trade might lead to an expansion of manufacturing in central Canada and a reduction in its importance in the periphery. Unfortunately, very little work has been done on the importance of economies of scale across regions, and it is well to remember that Harris and Cox themselves assume that all firms in an industry are identical, which obviously is not true. Whether the outlying regions of the country are at a great disadvantage in this respect is hard to say, however. Two pieces of evidence will be mentioned here. In their recent work on scale economies in Canada, Baldwin and Gorecki (1985b) find that a dummy variable representing the various regions is not significant in explaining Canada-US differences in the scale of output. Second, Table 5 shows the distribution of large-scale enterprises by region. The first entry in each pairing indicates the number of plants in the indicated industry that

Table 3
Free Trade's Effects on Sectoral GDP Shares, by Region

Sector	Proportional change in sectoral GDP resulting from multilateral free trade	Sector's share in regional GDP • in 1982 • after free trade				
		Atlantic	Quebec	Ontario	Prairies	B.C.
Agriculture	.60	3.6 5.1	3.3 4.6	3.6 5.0	12.5 16.5	3.0 4.2
Forestry	.31	1.9 1.7	.8 1.0	.5 .6	.2 .2	4.8 5.5
Fishing	.32	4.1 4.8	.1 .1	.1 .1	-- --	.9 1.0
Mines	.28	6.5 7.3	2.0 2.3	2.1 2.3	31.0 25.5	5.8 6.5
Manufacturing	.22	17.0 20.7	37.9 46.2	47.4 57.8	12.3 15.0	26.4 32.2
Construction	.04	12.7 11.6	8.0 7.2	7.2 6.4	12.7 10.9	13.4 12.1
Electricity, gas & water	.17	5.1 5.2	8.2 8.4	5.7 5.8	4.1 4.0	6.4 6.5
Other	.05	49.1 45.5	39.7 36.3	33.4 30.2	27.2 23.5	39.3 36.0
Total		100.0 113.5	100.0 114.9	100.0 116.4	100.0 121.6	100.0 114.6

Sources: Statistics Canada 61-101 *Provincial GDP by Industry*, Table 1; Harris and Cox (1984: Table 13).

Notes: GDP increase for manufacturing is weighted average using Ontario's industrial structure. Category "other" includes education, health and welfare, accommodation and food services, provincial government administration, and local government administration. GDP increase for this category is a weighted average of Harris and Cox's three categories, transportation, communication, and "others".

Table 4
Free Trade's Effects on Sectoral Employment, by Region

Sector	Proportional change in sectoral employment resulting from multilateral free trade	Sector's share in regional employment • in 1978 • after multilateral free trade				
		Atlantic	Quebec	Ontario	Prairies	B.C.
Agriculture	.33	2.1 2.0	2.9 2.8	3.4 4.3	13.0 16.3	2.3 3.0
Other primary	.13	5.0 5.5	2.1 2.3	1.4 1.5	3.9 4.1	4.1 4.9
Manufacturing	.12	14.4 15.6	22.5 24.1	24.5 26.2	9.1 9.6	15.9 17.2
Construction	.04	7.2 7.3	5.4 5.4	5.9 5.8	8.1 7.9	6.9 6.9
Transportation, communication & utilities	.02	10.4 10.3	8.8 8.6	7.4 7.2	9.3 8.9	5.7 5.6
Other	-.05	60.9 56.2	58.3 53.1	57.4 52.4	56.6 50.1	65.1 59.7
Total		100.0 103.0	100.0 104.4	100.0 104.5	100.0 106.4	100.0 103.6

Sources: Statistics Canada 71-529 *Labour Force Annual Averages*, Table 16; Harris and Cox (1984: Table 13).

Notes: "Other primary" includes forestry, fishing, and mining; the growth rate used is a weighted average of Harris and Cox's growth rates for these three industries. "Other" includes trade & commerce, finance, insurance, & real estate, services, and public administration; the growth rate used for this sector is a weighted average of Harris and Cox's growth rates for communications, electricity & gas, and "others".

Table 5
Establishments with more than 500 employees, by industry and region

Industry	Establishments with more than 500 employees/All establishments				
	Atlantic	Quebec	Ontario	Prairies	B.C.
Fish products	5/249				1/50
Frozen fruits & vegetables	2/5				
Rubber products	3/3	2/38	8/81		
"Other knitting mills"	1/6				
Pulp & paper mills	7/19	24/54	17/36	1/10	14/23
Iron & steel mills	1/1	2/19	8/23	2/6	
Smelting & refining	1/1	9/12	5/12	2/4	2/4
Railroad rolling stock & repair	1/2	2/7	2/8		
Shipbuilding & repair	2/24				3/21
Slaughtering & meat processing		1/125	4/174	6/127	
Poultry		1/23	1/36		
Dairy		1/107	2/155		1/24
Biscuit manufacturing		1/9	1/14		
Bakeries		1/383			
Breweries		3/3	3/11		
Tobacco product manufacturing		3/10	2/5		
Shoes		1/72	1/78		
Cotton yarn & cloth mills		3/15			
Fibre & filament yarns		1/6	3/12		
Throwsters, spun yarn & cloth		1/40			

Table 5
(Continued)

Industry	Establishments with more than 500 employees/All establishments				
	Atlantic	Quebec	Ontario	Prairies	B.C.
Miscellaneous textiles		1/95	1/144		
Men's clothing		1/229	3/132	1/61	
Foundation garments		1/18			
Sawmills & planing mills		1/396			5/320
Publishing		2/238			
Publishing & printing		3/73	8/201	3/159	1/69
Aluminum rolling & casting		1/22	1/39		
Boiler & plate makers		1/22	3/24		
Fabricated structural metal		1/46	1/100	1/60	1/43
Ornament & architectural metal		1/186			
Metal stamping & processing		1/152	2/317		
Furniture manufacturers		2/12			
Wire & wire products		1/61	2/147		
Miscellaneous metal fabricating		1/106	1/340		
Miscellaneous machinery & equipment		4/262	6/717		
Office & store machinery		3/16	2/62		
Aircraft & aircraft parts		4/45	7/51	2/26	
Motor vehicle manufacturing		2/5	8/10	1/1	
Motor vehicle parts & accessories		1/38	18/278		

Table 5
(Continued)

Industry	Establishments with more than 500 employees/All establishments				
	Atlantic	Quebec	Ontario	Prairies	B.C.
Miscellaneous vehicle manufacturing		1/7			
Manufacturing of major appliances		2/7	4/25		
Communication equipment manufacturing		6/88	11/263	1/38	1/43
Electrical equipment (industrial)		1/56	9/151		
Electric wire & cable		2/11	2/25		
Miscellaneous electrical products		1/32	3/78		
Glass		2/3	5/8		
Petroleum refining		1/8	2/10	1/10	
Plastics & synthetic resins		1/22			
Pharmaceuticals and medicines		3/48	2/66		
Toilet preparations		2/27	1/39		
Miscellaneous chemical industries		3/90			
Fruit & vegetables canners & preservers			2/85		
Flour & breakfast cereal products			1/27		
Confectioners			4/51		
Mixed food			3/131		
Distilleries			1/14		
Carpets, rugs & mats			1/14		
Automobile fabric accessories			3/11		
Women's clothing			1/136	3/26	

Table 5
(Continued)

Industry	Establishments with more than 500 employees/All establishments				
	Atlantic	Quebec	Ontario	Prairies	B.C.
Wooden box factories			1/102		
Household furniture manufacturing			1/339		
Miscellaneous paper containers			1/135		
Commercial printing			5/1175		
Steel pipe & tube mills			1/17	1/10	
Iron foundries			1/61		
Copper & copper alloy rolling			1/28		
Heating equipment			1/181		
Agricultural implements			5/67	2/78	
Small electrical appliances			1/41		
Household radios & TVs			2/10		
Paint & varnish			2/66		
Soaps & cleaning agents			3/60		
Industrial chemicals (inorganic)			4/29	1/20	
Industrial chemicals (organic)			5/23		
Instruments & related products			3/150		
Truck body manufacturing				1/25	
Veneer & plywood mills					1/29

Source: Statistics Canada 31-203 *Manufacturing Industries of Canada: National and Provincial Areas* have 500 employees or more in the given region, while the second number indicates the overall number of plants in this industry in the region. The results of the exercise are unambiguous. The Atlantic region has only 9 manufacturing industries in which at least some plants have more than 500 employees. Quebec has 47 such industries; Ontario, 60; the Prairies, 16; and BC, 10. Note also that in those industries in which more than one province has at least one firm this size, Ontario generally has the greatest number of such firms. Thus if firms that are already large *are* better placed to respond to new market opportunities – and this is not at all certain – then Ontario's manufacturing industry may well be better able to cope with freer trade than that of other provinces. The highly tentative nature of this conclusion must be emphasized, however. Current size may *not* help; also, the favourable change in relative costs and/or prices involved in freer trade may be greater for the outlying regions than for Ontario.

Finally, as mentioned, Harris and Cox's study deals with *multilateral* free trade, not bilateral free trade with the United States. Table 6 provides summary data on our trade with the United States. Indicators of existing (i.e., average) import penetration or export success obviously are not good indicators of *marginal* import penetration or export success, but Table 6 does seem to suggest that in several manufacturing industries we are already exporting successfully to the United States, while in several others the U.S. is not the only source of our imports. Thus a free-trade arrangement with the U.S. may well create trade diversion that favours Canada. In particular, those of our "soft" industries, where existing competition is not mainly from the U.S., may suffer smaller reductions in output than is indicated by the Harris and Cox multilateral free trade simulations. In fact, more recent work by Harris and Cox on a bilateral agreement with the U.S. confirms this (Harris and Cox, 1985). The regional implication of these findings is mainly that Quebec, where most of the soft industries are centred, may do better under a bilateral agreement than it would under a multilateral agreement (although it probably would do well under both).

Toward a Regional General Equilibrium Model

The analytical importance of investigating how *all* Canadian prices and quantities will change in response to a change in the trading environment should now be clear. To the economist, this means pursuing general rather than partial equilibrium analysis. Ideally, this final section of the paper would report the results of a general-equilibrium, regionally-based trade model for Canada. But since the Canadian economics profession has not

Table 6
Structure of Canadian Trade with the United States, 1985

Commodity	Imports		Exports	
	Percent of total imports	Percent from U.S.	Percent of total exports	Percent to U.S.
Live animals	.1	97.3	.5	92.4
Food, feed, beverages & tobacco	5.5	52.6	6.9	38.5
Meat & fish	.8	51.0	2.0	73.2
Fruits & vegetables	2.2	60.4	--	--
Cereals & preparations	--	--	3.3	6.8
Crude materials	6.3	45.8	17.2	61.8
Metal ores, concentrates & scrap	1.3	58.4	3.0	27.0
Fabricated materials	18.0	68.2	32.4	77.6
Wood & paper	1.4	82.2	13.4	77.5
Textiles	1.8	49.0	.2	57.9
Chemicals	5.5	75.6	5.1	66.7
Iron & steel	1.7	50.1	2.2	89.1
Non-ferrous metals	2.4	82.1	5.4	72.9
End products	68.4	78.0	42.7	92.1
General purpose machinery	2.9	75.5	--	--
Industrial machinery	--	--	2.6	77.4
Special industry machinery	4.6	72.7	--	--
Agricultural machinery & tractors	1.7	83.2	.5	87.8
Transportation equipment	35.6	86.8	31.4	96.9
Other equipment & tools	14.8	75.8	3.1	77.9
Clothing	1.6	7.1	.2	81.9
Footwear	.5	7.0	.04	93.0
Special transactions	1.6		.3	
Total imports	100.0	72.8	100.0	78.5

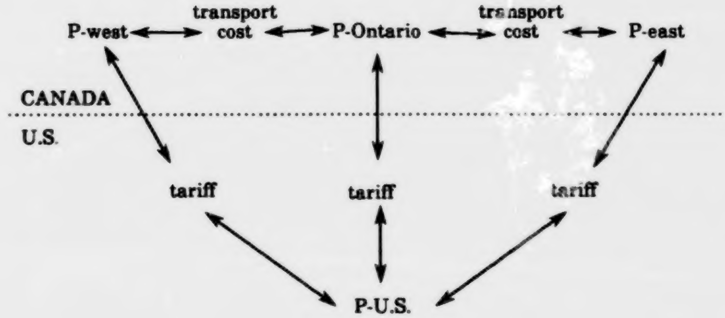
Source: Statistics Canada 65-001 *Summary of Canadian International Trade.*

Note: Data are for January-June 1985.

yet produced such a model, it will be necessary instead to sketch briefly how the intuition behind such a model might work. One of the major questions in building such a model would be how to incorporate transport costs into it. James Melvin of the University of Western Ontario has already done much of the preparatory conceptual work on this question, and this final section deals briefly with his view of the regional effects of tariffs and transport costs.[10]

Figure 2 shows how a general equilibrium regional model might be structured. The area above the checked line represents Canada; below it, the United States. The U.S. is a fully integrated market and prices are assumed identical everywhere in the country. Transport costs between Canada and the United States are zero. This is obviously an extreme assumption; all that is necessary, however, is that transport costs between Canada and the U.S. be less than those between the different parts of Canada, which is not at all unreasonable. Transport costs between the east, middle, and west of Canada are greater than zero. Finally, there is a tariff between Canada and the U.S.

Figure 2
A General Equilibrium Regional Model



In this framework, Canadians have a choice of where to buy their goods. They can buy goods from Americans and pay tariffs, but no (or lower) transport costs; or they can buy goods from fellow Canadians and pay transport costs but no tariffs. Exactly what they do, and therefore exactly what pattern of regional prices and production results, clearly depends upon the ratio of tariffs to transport costs. In a world with no tariffs, most trade is likely to be North-South, and Canadian regional prices will be determined by whatever the U.S. price is. If tariffs are introduced, however, consumers will begin to compare the U.S. price (including the tariff) with delivered prices from the rest of Canada. As the tariff rises there will be a tendency to substitute interregional trade for international trade. As Melvin (1985a, b) argues, from an economywide perspective this is entirely wasteful; resources are now being spent to move goods back and forth across Canada even though Canadian demands could be satisfied by trading with the U.S.

In this type of model, trade liberalization can have quite complicated effects, depending (among other things) upon how Canadian prices are set and upon where intermediate goods come from. For instance, if the tariff is removed, the eastern and western parts of the country will have access to U.S. products at U.S. prices. Presumably this leads to a reduction in their reliance on Ontario products, so that there are clear consumption gains from liberalization. On the other hand, it may also reduce the protection afforded local producers, so that local activity moves more toward regional comparative advantage and away from the protected industry. And, tariff removal may force a reduction in Ontario prices, either through scale effects or because imported inputs are now cheaper, so that the shift to North-South trade will be mitigated somewhat. At the same time, imported inputs will be cheaper to the peripheral regions, too, so that local producers will not be as hard hit by U.S. competition as otherwise would be the case. Finally, if Canadian tariff reduction prompts tariff reductions in the U.S., all Canadian producers likely will experience an increase in the demand for their goods.

The picture is even more complicated if industries are susceptible to increasing returns to scale. In this case, if protection affords Maritime producers (say) a larger market than they would have if they were forced to compete with U.S. producers, then the impact on regional manufacturing will be even greater than with constant returns to scale. On the other hand, if free trade means that they can get intermediate goods at lower cost, then protection may in fact reduce their access to markets, just as it (presumably) does now for Ontario manufacturers. The chance to integrate their economies more fully with the industrial belt of the U.S. Northeast may lead to *more* manufacturing in the Maritimes rather than less.

In sum, a general equilibrium analysis with regions, transport costs, and tariffs is likely to be a complicated affair and it is difficult to say *a priori* just what answer it would give on the question of which regions would be better served by further trade liberalization. At the very least, possible production losses resulting from increased vulnerability to foreign competition will be offset by consumption gains and by reduced input prices. And beyond that, if economies of scale are important, the regional devastation that many people seem to fear will *not* take place; quite the contrary.

What To Do?

As suggested, applied general equilibrium analysis has made great strides in the last 10 years and it probably will not be long before regionally and sectorally disaggregated models are available. We do not yet have such a model, however. The obvious policy question is what to do while prototypes are being built? Do we wait until we have some indication of the detailed effects of trade policy upon the regions? Or do we proceed with what Donald Macdonald has called – obviously with good reason – the "leap of faith"?

For several reasons, inaction is probably *not* the appropriate response to this dilemma. First, there is considerable evidence that the country as a whole would be considerably better off (economically, at least) if freer access to the U.S. market were obtained. Regionalism *is* an important phenomenon in Canada, but too often in the past regional concerns have blocked policies that probably would have produced gains for the country as a whole. The obvious problem has been in compensating losers so that the policy's net gains can be harvested. In the current debate on free trade, every serious proponent of an agreement with the United States has emphasized the need for adjustment policies: retraining, relocation, and severance grants, mainly. The question here is whether there should be special assistance to declining *regions*. In fact, such assistances may well not be necessary. If programmes are set up to deal with the problems faced by worker and entrepreneurs hit especially hard by import penetration, and if such problems are more serious in some regions than in others, then federal programmes will be *de facto* regional. Beyond that, Melvin (1985a, b) argues that although some factors of production in a region will suffer income reduction as a result of free trade, others will enjoy increases in income; so that *region*-specific (as opposed to *factor*-specific) programmes would be unfair. The reason is that factors in lagging regions that in fact have done well by trade will receive compensation that should be going to losing factors in winning regions.

On the other hand, even people who are not hit directly by trade, but who live in regions where many people *are* hit, presumably will resist any move to liberalization. In order to strike a political deal to obtain liberalization, the federal government will be tempted to make special regional concessions. These will work mainly by frustrating economic adjustment, however. And since it is efficient adjustment that creates the gains out of which compensation can be paid, too much in the way of concessions may exhaust the entire benefit from trade liberalization. To put this point in technical terms, if welfare maximization is constrained by the requirement that no region lose population, then the scope for welfare maximization may be very limited, indeed.

On a more optimistic note, however, a move to free trade with the United States would be but the final step in the long and steady liberalization of the two countries' trade, a process that began in the mid-1930s. Canada and its regions have more or less survived the adjustments required by what was by far the longer part of the journey and, in fact, differences in regional incomes have declined during this period. On the one hand, taking the last step may well produce further gains; on the other, it would be surprising if it brought the regional devastation that many people apparently fear. Although Canadian policymaking should always be informed by a sense of place, it should not be paralyzed by it, and it must also always reserve a place for sense.

Footnotes

1. Shearer (1985) is also pessimistic about the chances for successful negotiations. He argues that even regions in which natural resources are important, and which could reasonably expect to gain from free trade, will not approve it because it would terminate forced industrialization, a favoured policy of most provinces.

2. Dauphin (1978) and Pinchin (1979) are the most notable examples of the former, and Wonnacott and Wonnacott (1967) and Harris and Cox (1984) of the latter. For a more complete summary of the literature see Shearer (1985) and Whalley (1985a).

3. Probably the first and certainly the most famous statement of this view is Mackintosh (1964).

4. What is surprising is that economists should have been so successful in "hijacking" 11 non-economists of diverse backgrounds, experience and ideological predisposition.

5. Earl (1985) takes the opposite view and argues that since the Maritimes are involved either in resource-based manufacturing or in small-scale operations aimed at satisfying local demands, there would be no great rearrangement of Maritime production as a result of free trade: the tariff just isn't that important to Maritime industry. This ignores economywide effects of the sort described here, however.

6. Note that Pinchin's finding, the decline of the exchange rate after trade liberalization, is just the opposite of what Harris and Cox (1984) conclude. They calculate that there would be significant upward pressure on the Canadian dollar after the adjustment to a free-trade equilibrium. See below.

7. At the risk of belabouring a point that has already been mentioned and will be repeated later, we do not yet have a regionally disaggregated general equilibrium trade model for Canada.

8. An exception to the rule that the assumption of constant returns to scale produces small welfare costs from protection is Williams (1978), whose own general equilibrium model

produces a consumption gain of better than 4 percent as a result of unilateral free trade. Williams offers no explanation for this higher than expected number, but since his study uses 1961 data it may simply be that at the time—before the Kennedy Round and Auto Pact—tariff-induced allocative distortions were so large that, even assuming constant returns to scale, there were large gains to be had from trade liberalization.

9. Similar tables are published in Tremblay (1985), where an analogous exercise is performed.

10. Suggestive work in this area has also been done by McRae (1981) and Anderson (1982).

References

Anderson, F.J., 1982. "Transport costs and real income in a small region". *Canadian Journal of Economics*, 15, 3:525-33.

Baldwin, John, and Paul Gorecki, 1985. "The Relationship between Trade and Tariff Patterns and the Efficiency of the Canadian Manufacturing Sector in the 1970s: A Summary". In John Whalley (ed.), *Canada-United States Free Trade*. Toronto: University of Toronto Press.

Boadway, Robin, and John Treddenick, 1978. "A general equilibrium computation of the effects of the Canadian tariff structure". *Canadian Journal of Economics* 11, 3:424-46.

Dauphin, Roma, 1978. *The Impact of Free Trade on Canada*. Study prepared for the Economic Council of Canada. Ottawa: Minister of Supply and Services Canada.

Earl, John F., 1985. "US-Canada Free Trade: A View from the East". In John Whalley (ed.), *Canada-United States Free Trade*. Toronto: University of Toronto Press.

Eastman, H., and S. Stykolt, 1967. *The Tariff and Competition in Canada*. Toronto: Macmillan.

Hamilton, Colleen, and John Whalley, 1985. "Regional Considerations and Canadian Trade Policies: Summary of the Proceedings of a Research Symposium". In John Whalley (ed.), *Canada-United States Free Trade*. Toronto: University of Toronto Press.

Harris, Richard, and David Cox, 1984. *Trade, Industrial Policy, and Canadian Manufacturing*. Toronto: Ontario Economic Council.

Mackintosh, W.A., 1964. *The Economic Background of Dominion-Provincial Relations*. Toronto: McClelland and Stewart for the Carleton Library.

Markusen, James R., 1985. "Canadian Gains from Trade in the Presence of Scale Economies and Imperfect Competition". In John Whalley (ed.), *Canada-United States Free Trade*. Toronto: University of Toronto Press.

Masters, Donald C., 1981. *The Reciprocity Treaty of 1854.* Toronto: McClelland and Stewart for the Carleton Library.

McCrae, James J., 1981. "An empirical measure of the influence of transportation costs on regional incomes". *Canadian Journal of Economics* 14, 3:474-502.

Melvin, James R., 1985a. "The regional economic consequences of tariffs and domestic transportation costs". *Canadian Journal of Economics* 18, 2:237-57.

______________, 1985b. "The Regional Impact of Tariffs". In John Whalley (ed.), *Canada-United States Free Trade.* Toronto: University of Toronto Press.

Pinchin, Hugh McA., 1979. *The Regional Impact of the Canadian Tariff.* Study prepared for the Economic Council of Canada. Ottawa: Supply and Services Canada.

Royal Commission on the Economic Union and the Development Prospects for Canada, 1985. Report. Ottawa: Supply and Services Canada.

Shearer, Ronald A., 1985. "Regionalism and International Trade Policy". In John Whalley (ed.), *Canada-United States Free Trade.* Toronto: University of Toronto Press.

Tremblay, Rodrigue, 1985. "The Regional Impact in Canada of Free Trade". *Canadian Journal of Regional Science* 8, 1:85-100.

Watson, William G., 1986. "Public Choice, Free Trade, and Deregulation". Paper prepared for the 1986 Meetings of the Canadian Economics Association. Mimeographed.

Whalley, John, 1985a. *Canada-United States Free Trade.* Research Volume 11 of the Royal Commission on the Economic Union and Development Prospects for Canada. Toronto: University of Toronto Press.

______________, 1985b. *Trade Liberalization Among Major World Trading Areas.* Cambridge, Mass.: MIT Press.

Williams, James R., 1978. *The Canadian-United States Tariff and Canadian Industry: A Multisectoral Analysis*. Toronto: University of Toronto Press.

Wonnacott, Ronald J., 1975. *Canada's Trade Options*. Ottawa: Minister of Supply and Services.

_____________ and Paul Wonnacott, 1967. *Free Trade Between the United States and Canada*. Cambridge: Harvard University Press.

Young, John H., 1957. *Canadian Commercial Policy*. Ottawa: Royal Commission on Canada's Economic Prospects.

PART THREE

TECHNOLOGY, ENERGY AND HUMAN RESOURCES

Chapter 8:

Energy Policy, Prices and Rents: Implications for Regional Growth and Development

Robert L. Mansell

Introduction

The dramatic energy price increases of the 1970s undoubtedly represent one of the most important events in recent decades from the viewpoint of shifts in the regional structure of the Canadian economy (see papers in this volume by Polèse, Termote and Coffey). These increases were equally important in another respect, however. Specifically, they represent an almost ideal experiment with which to study the dynamics of Canadian federalism and the many complex intra- and interregional adjustments associated with a major regional shock. Indeed, the sheer magnitude of the effects, combined with the heated policy debates that ensued, provided the motivation for a considerable volume of important research covering a wide range of regional issues. In addition to the application of more sophisticated analytical tools (for example, general equilibrium models), this research explored topics which, hitherto, had received little or no attention in the regional economics literature. One of these topics is the regional implications of energy policy, prices and rents.

The primary objective in this paper is to summarize the main strands of this, and earlier, research that are relevant to regional economic growth and development in Canada. For the most part, attention is focussed on the regional implications of oil and gas policy, prices and rents. As such, the results are clearly relevant in terms of assessing past and future developments in the Western provinces where the bulk of Canada's known oil and gas reserves are located. Many of these results can also be generalized and applied to other natural resources and to other regions, however. For example, as shown by Zuker and Jenkins (1984), there are substantial rents associated with the generation of hydro-electricity in Canada. Similarly, Copithorne (1979) has demonstrated the existence of sizeable rents in other natural resource industries, such as forestry, as well as in the manufacturing sector. With respect to generalization to other regions perhaps the best cases at present are Newfoundland and Nova Scotia. In both provinces there exists the potential for off-shore energy development to play an important role in shaping and fueling their regional economies in the years ahead (Economic Council, 1980; see also the paper by DeWolf in the present volume).

This paper begins with a discussion of the role of the energy sector in regional development and growth. Using Alberta as an example, it is shown that its role can be pervasive even though the direct impacts in terms of measures such as employment are small. In addition, this section maps out the various mechanisms by which energy price changes influence the size and structure of the regional economy. The third section deals with the rent issue, which has become the focus of energy policy in recent years. The definition, measurement and estimates of energy rents are outlined along with a brief discussion of methods used to capture them. In the fourth section a variety of policy issues concerning the pricing of energy resources, alternative uses of the rents and regional growth and development are outlined. A summary is provided in the final section.

The Role of the Energy Sector in Regional Development and Growth

It should be noted at the outset that the primary focus here is on the role of the energy sector in a small regional economy. Essentially, this means an economy which is a "price taker" for the goods and services traded across regional boundaries and one which is basically "open"; that is, there is relatively free interregional movement of commodities, funds and labour. The provincial economies of both the Western and Atlantic regions of Canada would generally fit this mold.

The most common and visible indicator of the importance of an industry or sector to a regional economy is its direct contribution to employment. Using this criterion, energy does not score very highly. Even in Alberta, the oil and gas sector directly accounts for only about six percent of total employment (Alberta Bureau of Statistics, 1985) and , on the basis of the North Sea experience, similarly small employment impacts have been predicted for Newfoundland's off-shore oil development (Economic Council, 1980; Mobil Oil Corporation, 1985). Yet one needs only to compare the Alberta economy with that of, say, Saskatchewan to see that this sector can have a pervasive influence. This, in turn, can be related to a number of its most distinguishing characteristics: specifically, it ranks as one of the most capital intensive and productive sectors anywhere[1]; it typically generates substantial export earnings for the region; and, its location, along with that of many related activities, tends to be locked to the raw materials site.

There is probably no better case than that of Alberta to demonstrate the manner in which these characteristics translate into extensive and relatively unique effects on the structure, character and performance of a small regional economy. In addition to representing one of the most dramatic examples of energy-based development and growth, the impacts on the Alberta economy are fairly simple to isolate since there were few other significant events taking place simultaneously. For the purpose of summarizing these impacts it is useful to distinguish between two quite distinct phases. The first is the development stage and it covers roughly the period from the late 1940s to the early 1970s. The second corresponds to the post-1973 period and, as such, is used to isolate the effects of shifts in energy prices and policy on an energy-based regional economy.

Development Stage

Although petroleum was discovered in Alberta before the turn of the century, the industry did not begin to develop on a significant scale until 1947 when the Leduc field was discovered. This and subsequent finds set the stage for an investment-generated boom that represented a major turning point for the Alberta economy. Prior to this time there was an increasing outflow of people from the province, primarily as a result of the capital intensification which was displacing workers from the agriculture sector. By 1950, however, the population flow reversed and, with the exception of three years in the mid-1960s, net in-migration remained positive and substantial. It is interesting to compare this experience with that of Saskatchewan. For example, in 1941 the respective populations of Alberta and Saskatchewan were 818,000 and 896,000, whereas by 1971 they were 1,628,000 and 926,000. Similarly, whereas total personal income in Alberta was only slightly higher than that in Saskatchewan in 1941, by 1971 it was more than twice as large; almost all of this difference can be explained by the development of the petroleum industry in Alberta.[2]

These impacts on the Alberta economy closely follow those predicted by the staple or export-base theories of regional development and growth (Watkins, 1963; Stabler, 1968; Richards, 1985): the discovery of a staple which can be economically exploited initially attracts capital and labour to the region. This, combined with subsequent exports of the staple, generates an income and population base which, over time, leads to the development of other industries dedicated to serving local markets. As stated by Norrie (1984:65-66) the end result is an economy consisting of a large primary sector[3] which exports most of its output; an underdeveloped manufacturing sector; a large service sector; and an industrial structure primarily based on processing raw materials prior to export or on providing inputs for the extractive sector.

While this is a fairly accurate description of the Alberta economy as it existed in the late 1960s (and, to a large extent, even as it exists today), it overlooks many of the unique contributions of the petroleum industry to economic development in the province. These have been outlined by Hanson (1958) and Mansell (1981); several of the more important are as follows. First, because of its high capital intensity and the specialized and technological nature of its input requirements, this industry generated strong forward and backward linkages within the province. The result was large interindustry multiplier effects. In fact, the coexistence of these strong linkages and the concentration of massive amounts of capital that is associated with this industry means that it closely fits the classical definition of a "key" or "motor" industry for the purpose of regional development.[4] Second, the high productivity and the requirements for a highly-skilled labour force translated into above average wage levels in petroleum and related activities, the development of a skilled labour force in the region, and an impetus for urbanization. Finally, it made substantial contributions to government revenue, which facilitated the development of social infrastructure without the need for high regional taxes.

The emergence of the petroleum sector also played an important role in shaping the character of the Alberta economy. Like agriculture, this sector tends to be typified by capital-intensive production processes, a high degree of risk, externally determined prices, and a large number of independent producing units. Thus, as in the case of Texas, it did not generate a broad base for organized labour. Instead, it laid (or reinforced) the foundation for basically rural-conservative values characterized by rugged individualism, risk-taking, and entrepreneurial awareness. Further, the massive capital requirements involved ultimately meant a strong foreign (American) presence in the province. This, in turn, served to strengthen the pro-foreign investment sentiments of Albertans as well as to pave the way for the foreign ownership issue which was to play such a critical role in shaping national energy policies in the 1970s.

By speeding up the urbanization trend and providing the basis for the development of a large managerial/entrepreneurial class, the petroleum sector also played an important role in the political transformation of the province, marked by the election of the Conservatives in 1971. As described by Richards and Pratt (1979), this involved the replacement of a populist-agrarian political regime with one embodying the method and values of a new managerial-urban elite. Although difficult to quantify, the impact of this change in terms of attitudes and approaches to regional development has been substantial. Finally, it might be noted that, like agriculture, the fortunes of the petroleum industry were (and still are) largely determined by policies and events outside of the control of those in the region. Thus, the development of the oil and gas industry served to intensify the sense of alienation that has long characterized the Western Canadian psyche.[5]

The model of resource based determinism represents a useful way of summarizing the role of the energy sector in the development of a small regional economy. Briefly stated, the main hypothesis embodied in this model is that the resource base determines, through the development of various linkages, the region's industrial structure and character; the latter, given external events and policies, is a prime determinant of the overall development and performance of the regional economy. Although this is no doubt an over-simplification, the foregoing discussion and the results of comparisons between the Alberta and Texas economies (Mansell, 1981) suggest that it is a reasonable representation of the role of the oil and gas sector in regional development and growth.[6]

The Post-1973 Period

Prior to the early 1970s real oil and gas prices had followed a fairly steady pattern of gradual decline[7] and the focus of energy policies in Canada was generally on the orderly and efficient development of the oil and gas industry.[8] All of this changed, however, with the OPEC oil embargo in 1973; world energy prices began a dramatic upward spiral and energy policy quickly shifted to the taxation and distribution of oil and gas rents. Although national policies prevented domestic petroleum prices from rising as fast as those at the international level, the impacts on the Alberta economy were still substantial. This section outlines both the mechanisms involved and the nature of the macro, structural and interregional impacts that occurred.

Macro Impacts. The years 1973 to 1981 marked a period of almost continuous "boom-type" growth for the Alberta economy, and this was largely the result of significant actual or expected increase in oil and gas prices. Unlike the earlier period when expansion of energy exports played a key role, however, these macro impacts occurred primarily through mechanisms involving investment; real Alberta exports showed little, if any growth after 1973 (Alberta Bureau of Statistics, 1984:Table 3). Thus, the simple staple or export-base paradigms no longer offered an adequate explanation of the role of energy in Alberta's economic growth. Rather, more detailed and sophisticated models became necessary for this purpose.

It is now clear that most of the macro impacts in the province over the post-1973 period represented the outcome of a multiplier-accelerator process initiated by the substantial increases in energy and energy-related investment. The existence of strong linkages between the petroleum sector and other sectors of the economy set the stage for large interindustry or Leontief multiplier effects which were further enhanced by "Keynesian" multiplier processes.[9] In addition, there was a significant increase in net migration to the province as a result of the growth in employment and income opportunities in Alberta relative to those available in other regions.[10] This induced migration, in turn, produced a "population multiplier" effect by further increasing consumer, investment and government demands for good and services in Alberta. The end result was that each actual (or expected) increase in energy prices led to increases in energy investment which, through these three multiplier processes, produced a major expansion in the Alberta economy. In fact it has been estimated that, through these mechanisms, every one percent rise in real oil and gas prices raised the equilibrium growth rate for real Gross Domestic Product (GDP) in the province by almost one-third of a percentage point (Mansell, 1984).

It is important to emphasize that investment was the key factor in this energy-price induced growth process. While energy-related investment was the main initiating factor, it was the investment in private and social infrastructure as a result of the growth in population, income and output (the accelerator mechanism) that fueled the growth process over this period. This can be most easily seen by looking at total (real) investment as a percentage of Alberta's (real) GDP; in 1973 it was 29 percent, but by 1981 it had grown to almost 50 percent (Alberta Bureau of Statistics, 1984:Table 3). Unfortunately, as demonstrated by the collapse of the province's economy after 1981, such investment-based growth is inherently precarious and the multiplier-accelerator mechanism also works in reverse.

Another interesting feature of Alberta's growth during the 1970s is that it was mostly of an extensive rather than an intensive nature. For example, although the increase in population, income and output were large, wage and per capita income levels in the province more or less followed historical patterns. As with the oil and gas investment-boom in the early 1950s, Alberta's per capita income position relative to that of the nation showed a small and temporary increase. The main reason for this can be found in the high mobility of labour both into and out of the region in response to variations in relative income and employment opportunities. That is, extensive economic growth has historically led to levels of in-migration to the region sufficiently large to dampen any significant long-run deviations in wage and per capita income levels from the national average (Courchene, 1970; Mansell, 1975; Mansell and Wright, 1978; Grant and Vanderkamp, 1980; and Mansell and Copithorne, 1985). Nevertheless there have been some intensive effects associated with the rapid growth. In addition to the positive effects of substantial and sustained net in-migration on the structure of the province's population and labour force,[11] there have undoubtedly been others through mechanisms, such as those outlined by Bradfield (1976), which have served to strengthen Alberta's relative wage and per capita income position.

Sectoral Impacts. Along with the macro impacts, the energy price increases in the post-1973 period also had significant effects on the structure of Alberta's economy. Among the most visible was the rapid growth in the mining sector, at least as measured by its direct contribution to total output. As shown in Table 1, the relative contribution of this sector (which mostly consists of the oil and gas industry) to total provincial GDP increased by over 60 percent between 1961 and 1971, and most of this was due to additional value added in the form of energy rents. It can also be observed that only two other sectors (construction and finance) did not show declines in their relative contribution to total output. It is probably no coincidence that both of these would be the most direct beneficiaries of investment-led growth. Basically the same story is told by the percentage contributions of the various sectors to employment in the province.

Table 1
Percentage Distribution of Gross Domestic Product (at Factor Cost) and Employment by Sector, Alberta, 1971 and 1981

Sector	% of GDP 1971	% of GDP 1981	% of Employment 1971	% of Employment 1981
Agriculture[1]	6	5	15	8
Mining[2]	19	31	4	6
Manufacturing	9	8	9	9
Construction	8	8	7	11
Transportation, Communications and Utilities	11	9	9	9
Trade	11	9	18	18
Finance, Insurance and Real Estate	10	11	5	5
Services	18	14	27	28
Public Administration	7	5	6	7

[1] Includes fishing, trapping and forestry.

[2] Natural resource royalties are included in Mining sector value added.

Note: Columns may not add to 100 because of rounding.

Source: Based on data from *Alberta Economic Accounts, 1983* (Table 13) and *Alberta Statistical Review*, various issues (Table 19).

It is interesting to note that the shifts displayed in Table 1 are roughly consistent with the predictions of a number of general equilibrium models for a small regional economy. One of the more interesting examples is that developed by Norrie and Percy (1981; 1982; 1983) to, among other things, study the effects of energy price increases on the structure of a resource-based regional economy. It consists of six sectors and embodies a variety of mechanisms similar to those found in the "Dutch Disease" literature.[12] On the basis of this model, the general results of an increase in the price of energy can be summarized as follows:

(i) In the short run, the terms-of-trade effect (that is, the increase in the value of exports relative to imports) produces an increase in real incomes which translates into greater demand for the output of the secondary manufacturing, services and government sectors.

(ii) The increases in wage rates that are generated in these sectors cause downward pressure on output in those sectors which cannot pass the higher costs along in the form of higher prices (that is, all sectors except services and government).

(iii) In the long run, the factor constraints on output expansion are relaxed by increased net in-migration to the region in response to factor price differentials.

(iv) Finally, the interregional and intersectoral labour (and capital) movements both reduce the factor price differentials and allow an expansion in output in all sectors. This expansion is, however, unevenly distributed: the non-renewable sector shows the greatest growth with the result that the regional economy becomes even more specialized in primary production.

Exercises of this type invariably involve the use of assumed relationships and parameter values rather than relationships and values which have been validated and estimated using actual (historical) data and accepted econometric practices. Hence there is always the possibility that the results are not valid in any empirical sense. This does not appear to be the case, however; much the same conclusions have been reached using a large-scale econometric model of the Alberta economy.[13] Based on simulations with MAE 2.0, the sequence of events following higher energy prices can be described roughly as follows:

(i) Energy price increases produce a significant expansion in energy investment, primarily as the result of increased cash-flow and the expectation of further rises in the price of energy. Via input-output linkages, this then generates increases in demand for the output of other sectors, especially those that are most directly linked (for example, construction and some manufacturing, service and transportation industries).

(ii) Given the temporary shortages of specialized labour, wage and salary levels in the wage-setting sectors (mainly mining and construction) rise sharply. This then sets the stage for wage/price spirals in all other sectors as they compete for labour and other input requirements.

(iii) The Leontief and Keynesian multiplier processes set in motion by the initial increase in investment are compounded by the population multiplier as the expanded employment and income opportunities attract people from other regions.

(iv) In order to meet the demands and infrastructure requirements of a larger economy there is a sharp increase in investment spending which further fuels the growth process.

(v) As local supply constraints become binding, imports to the region increase sharply, as do the prices of non-tradeables (for example, housing and local services). At the same time, industries in the province which face prices set by external markets become increasingly non-competitive. The end result is that while all sectors expand, the economy ends up being less diversified away from the energy sector. Further, it is less stable as a result of the dominance of investment related activities and the existence of large locational rents in the prices of locally produced non-tradeables.

In general then, it would appear that energy price increases can and do have significant effects on the industrial structure of a small resource-based economy such as that of Alberta. There is considerable uncertainly at this time, however, as to the extent that the results summarized here can be generalized. For example, although the recent resurgence of small export-oriented manufacturing activities in Alberta might suggest that falling energy prices produce the opposite results (that is, increased diversification away from the resource base) there are also many more examples of downwardly inflexible wages and prices than ones which are upwardly inflexible. Finally, it must be emphasized that the effects will not be independent of government rent collection and rent-use policies arising from changes in energy prices. These issues are taken up further below.

Interregional Impacts. The interregional implications of rising energy prices represent one of the most hotly debated issues in Canada during the post-1973 period. Unlike earlier energy policy debates, this one had all of the ingredients for a classic regional struggle: a peripheral region, perceived to be gaining only at the expense of the other regions, challenging the established political and economic order; a substantial interregional reallocation of wealth, income and people; and, the emergence of huge oil and gas rents which upset the fiscal equalization scheme, produced conflicting revenue claims by governments and raised fundamental questions about the meaning of Canadian federalism.

The research spawned by these debates covers the political, legal and economic dimensions of these issues and can only be described as extensive. No attempt is made here to provide a comprehensive survey. Rather, the focus is limited to the research dealing with the interregional economic adjustments and impacts arising from energy price increases.

Within the Canadian federal system, region-specific impacts are mainly transmitted to other regions via interregional movements of commodities, factors and funds. Unfortunately, our present understanding of the causes and effects of these adjustments is quite uneven. While a good deal is known about the determinants of interregional migration (for a survey see Vanderkamp, 1985), there are substantial gaps in our knowledge of the nature and significance of the effects of migration or of the exact determinants and effects of regional trade and regional trade imbalances (Mansell and Copithorne, 1985). Thus, one is left to rely primarily on the predictions of general theory supplemented with only spotty information about the empirical nature of the relationships.

Courchene (1980; 1981) provided one of the earliest descriptive accounts of the interregional impacts of rising energy prices. His framework consists of the oil producing provinces (the West) and oil consuming provinces (the East). Based upon international balance of payments theory, supplemented by interregional factor allocations, the predicted effects are as follows:

(i) The improvement in terms-of-trade for the oil producing regions and the decline in that of the oil consuming regions necessitates an immediate transfer of real income from the East to the West. The existence of a common currency means that, in the short run, this adjustment takes place through a financial transfer rather than an adjustment in real terms. Consumption and/or saving decrease in the East and increases in the West.

(ii) Over the longer term, the adjustment must be made in real terms. Higher energy prices reduce production in the East as manufacturing firms lose sales in the international market, as the increased transport costs (through their tariff effects) make Western locations more profitable and as labour and capital are drawn to the West.

(iii) In the absence of increased fiscal transfers from the West to the East, changes in real wages and/or unemployment in the two regions will occur as a result of the East's balance of payments deficit and the West's surplus. Given the rigidities involved and the institutionalized nature of regional wage patterns, it is predicted that most of the adjustment will be in the form of higher unemployment in the East and an eventual decline in its relative real wage level.

On the basis of various simulations with a two-region general equilibrium model, Percy and Norrie (1983) reach similar conclusions, although their results show that the outcome is highly dependent on the manner in which the energy rents are distributed. In any case, it is clear that the initiating factor in these scenarios (that is, the change in regional terms of trade) did become a reality[14] along with the predicted reallocation of labour and capital from the East to the West. It is difficult, however, to assess the validity of the ultimate consequences of rising energy prices that are predicted – a fall in the real wages and higher unemployment in the East relative to the West. First, domestic oil and gas prices were held considerably below world levels and the resulting massive transfer from the West to the East (see Appendix 1) no doubt prevented many of the predicted interregional effects on wage, income, and unemployment levels. Second, even if prices had been allowed to rise to world levels, it is far from clear that the end result would have been a richer West and a poorer East. To be sure, the East would have been smaller in terms of total income and population and the West would have been larger, but it is unlikely that any statistically significant changes in relative per capita income and wage levels would have resulted. As has been the case historically in Canada, major regional shifts have not done much to alter the structure of regional unemployment, income or wage disparities, and this is probably due to the strong equalizing effects of adjustments via interregional trade and migration (Mansell, 1975; Mansell and Copithorne, 1985).

Another issue which is relevant to the interregional impacts of energy prices is that of fiscally induced migration. Basically, the argument goes as follows. Unless the rents are distributed across the nation, higher energy prices raise net fiscal benefits (the difference between the value of public goods and services offered to residents of a region and the taxes which they pay) in the West. Since it is assumed that interregional migration occurs in response to regional differences in the sum of market income and net fiscal benefits, the result will be too much migration from the East to the West. That is, migration equilibrium occurs for individuals when the sum of their market incomes plus net fiscal benefits is equal across regions. As a result of the higher net fiscal benefits in the West, that region will end up with lower market incomes than those in the East. Since market incomes are not equalized, national per capita income will not be as high as it otherwise would have been, and hence there is an efficiency loss.

Although this issue has received considerable attention in the literature in recent years (for a survey see Winer and Gauthier, 1982), it cannot be said to be settled. It is fairly evident from even the earliest empirical studies which included fiscal variables (for example, Courchene, 1970) that fiscal transfers among the regions have served to retard migration in Canada and, hence, to reduce its effectiveness as an adjustment mechanism. It is not equally clear, however, that the existence of a Heritage Fund to hold energy rents, or of net fiscal benefits in the West has served to produce "over migration." From a purely theoretical perspective, migrants to the West would only be able to "buy into" such benefits by becoming employed in the region. Hence, relative employment opportunities become a significant conditioning factor. This is quite different from other fiscal benefits which accrue to individuals whether they are employed or unemployed in the region. Further, as noted by Vanderkamp, (1985) the empirical work is equally unconvincing in terms of demonstrating that the substantial in-flow of people to the West during the 1970s was, in any statistically significant sense, the result of large net fiscal benefits rather than the more common economic determinants.

The Energy Rent Issue

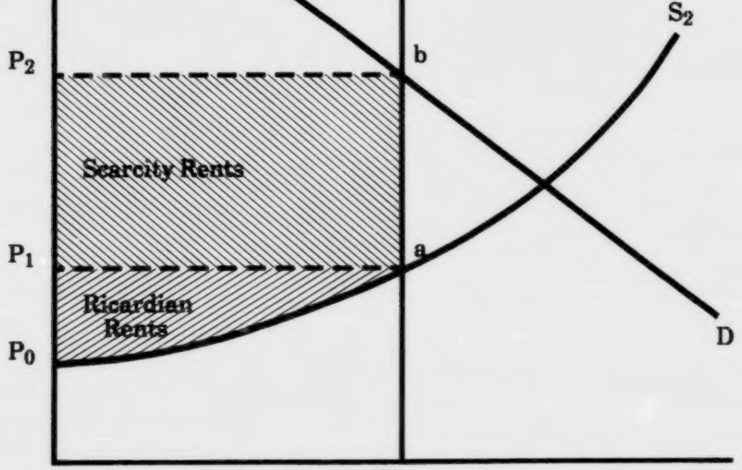
Prior to 1973 the term "economic rent" had little if any meaning to most Canadians, including policymakers. After 1973, however, this was to change almost as rapidly as world oil prices. In just a few years the term went from relative obscurity to the forefront in policy debates covering a wide range of topics – energy prices and taxation, revenue sharing, resource ownership, fiscal equalization and regional development, to name a few. At the same time, however, both economists and policymakers would quickly learn that, although energy rents were easy enough to define, their measurement, capture and effects were complex. This section traces this learning process with regard to the measurement and capture of economic rents. The issues concerning the effects associated with their alternative uses are dealt with in a later section.

The Definition and Measurement of Energy Rents

Simply stated, a resource generates economic rent whenever its social value exceeds its marginal (social) cost of production. Such rents, however, are not equally appropriable by the resource owner. In order to understand this it is useful to recall the various concepts of economic rent.[15]

In the case where the supply of a resource is fixed and known, and where it has no alternative uses, any positive price commanded by the resource represents a *pure economic rent.* As illustrated in Figure 1, given supply S_1 and equilibrium price P_2, the pure economic rent is equal to the area OP_2bQ_1. If, on the other hand, the supply is temporarily fixed, this rent is referred to as a *quasi-rent.*

Figure 1
Economic Rent Concepts



Two other rent concepts are illustrated in Figure 1. Consider the case where the supply curve is as shown by S_2, where quantity is fixed at Q_1 (by short-run capacity constraints or institutional factors) and where the price is P_2. Here, *scarcity rents* arise and are equal to the difference between the value of production (P_2) and the marginal cost (P_1) times the level of output. Further, because of differentials in the quality and hence cost of the various units of production, *Ricardian rents* (as shown in Figure 1) also exist, In theory, all of these rents can be appropriated by the resource owner without altering supply.

It is probably fair to say that the dominant view among policymakers circa 1973 was that oil and gas rents were primarily of the pure variety. As subsequent events were to reveal, however, the supply of oil and gas cannot be considered to be fixed or known. As outlined by Uhler (1977) the supply is variable, even in the short-run, and ultimately depends a great deal on both the price and the level of reinvestment of energy rents in exploration.

The notion that (sunk) exploration costs must also be taken into account in defining energy rents set the stage for the Cairns-Grubel debate in the late 1970s. Cairns (1977; 1980) basically took the view that production from resources of differing quality leads to Ricardian rents as illustrated in Figure 1, and, that these can be appropriated without affecting supply. Grubel (1979; 1980), on the other hand, argued that the higher quality reserves must earn an amount in excess of marginal production costs simply to compensate producers for exploration expenditures that do not lead to discoveries. Thus, what appear to be Ricardian rents are not rents at all, and the only rents that are appropriable without altering production are the Scarcity and (apparent) Ricardian rents minus exploration costs.

The difficulties, even at the theoretical level, of measuring energy rents are most readily indicated by the attention this topic has received in the resource literature since the mid-1970s. Perhaps most interesting is that, in some of the most recent work, the focus has shifted from direct measures based on the difference between price and marginal cost to implicit measures. For example, Devarajan and Fisher (1983) argue that exhaustible resource rents can be measured by the amount firms are willing to spend on exploration for additional supplies. Lasserre (1985), however, using a more complex approach, demonstrates that to accurately estimate such rents both discovery costs and the rents generated by exploration prospects must be included. Yet another interesting approach is that used by Zuker and Jenkins (1984) to measure the hydro-electric rents in Canada. Their measure is based on the difference between the cost of electricity produced by the current system and the cost under a hypothetical least-cost, all-thermal system.

In actual practice the measurement of rents for the purpose of calculating royalties and taxes is fraught with problems. Perhaps the most difficult one is that rents can very quickly become capitalized in the cost of inputs. That is, initially all of the additional rents associated with higher energy prices accrue to the industry, and the resulting expansion in activity drives up the prices of inputs (e.g., drilling rigs and geologists) whose supplies are relatively inelastic in the short-run. Beyond this point, any attempt by the government to appropriate the rents calculated on the basis of historical price and cost relationships will reduce supply since much of the rent has already been dissipated in the form of higher input prices. Additional problems arise because prices and costs show considerable variation over time; the data on costs associated with production from reserves of varying quality and alternative raw materials sources are notoriously unreliable; the data which are typically available measure average rather than marginal costs; and finally, these data are based on actual levels of investment and production and these may not be the levels which are socially optimal.

Estimates of Energy Rents in Canada

Given the problems noted in the previous section it should not be surprising that there are few estimates of the total size of energy or other natural resources rents. In fact the only available estimates on a national basis are those produced by the Economic Council of Canada (1982) and summarized in Table 2. Although there are some problems with the measurement techniques used (Anderson, 1985) these estimates (which, with the exception of forestry, are limited to energy production) clearly illustrate three important points. First, energy rents in Canada are indeed large. For example, in 1980 they amounted to about 10 percent of GNP or about $1,200 per capita. Second, they are quite unevenly distributed across the regions. Third, only about one-quarter of the rents were collected by the resource owners (the provinces) with the bulk being transferred by artificially low prices, especially for oil, gas and hydro-electricity.

Methods of Capturing Energy Rents

If it is assumed that rents can be measured in an accurate and meaningful manner the first question that arises is "what proportion of these rents can be efficiently transferred to the

Table 2

Estimates[1] of the Magnitude and Distribution of Natural Resource Rents, Canada, by Province or Territory, 1980

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon & Northwest Territories	Canada
						(Millions of current dollars)						
Provincial natural resource revenues (excl. water power rentals)	27.9	0.2	9.8	13.4	114.1	138.4	43.2	695.2	5,089.3	874.7	-	7,006.4
Rents not collected on:												
Crude oil	-	-	-	-	-	13.6	83.3	1,296.3	10,305.9	315.8	23.5	12,038.6
Natural gas and LPG	-	-	-	0.3	-	45.3	-	183.6	5,242.8	521.7	54.9	6,048.5
Hydro-electricity	736.7	-	26.4	70.5	1,514.4	758.1	455.8	29.0	6.7	139.7	-	3,737.3
Total rents by province of production	764.7	0.2	36.3	84.2	1,628.5	955.6	582.3	2,204.1	20,644.6	1,851.9	78.4	28,830.8
Hydro rents lost on exports	-73.5	-	-0.1	-9.1	-175.0	-92.4	-55.6	-0.1	-	-6.3	-	-412.1
Redistribution to other provinces of rents not collected on:												
Crude oil	305.5	58.6	683.7	659.3	3,320.4	3,761.0	302.4	-831.5	-9,194.4	892.3	42.8	-
Natural gas and LPG	1.6	0.4	4.5	3.1	387.7	2,407.4	279.3	269.7	-3,408.3	80.0	-25.4	-
Hydro-electricity	-529.6	3.4	3.9	71.3	334.7	162.2	-76.4	30.5	0.4	-0.4	-	-
Redistribution of natural resource revenues to other provinces through equalization	27.6	15.2	83.9	54.2	502.2	-431.0	84.1	-103.6	-114.2	-114.3	-4.0	-
Total redistribution of rents to other provinces	-194.9	77.6	776.0	787.9	4,544.9	5,899.6	589.4	-635.0	-12,716.5	857.5	13.4	-
Net distribution of rents	496.2	77.8	812.1	862.9	5,998.4	6,762.9	1,116.1	1,569.0	7,928.1	2,703.2	91.8	28,418.6
						(Dollars per capita)						
Resource rents, by province of production	1,318.6	1.9	42.5	119.0	258.4	111.5	566.2	2,274.1	9,932.5	702.4	1,217.5	1,205.6
Redistribution of rents to other provinces	-336.1	624.1	910.2	1,114.3	721.0	688.4	573.2	-655.2	-6,118.1	325.3	208.5	-
Net distributed rents	855.7	626.0	952.7	1,220.4	951.6	789.1	1,085.3	1,618.9	3,814.4	1,025.3	1,426.0	1,188.3

LPG - liquefied petroleum gases.

[1] Average of the high and low estimates in Appendix B

Source: Economic Council of Canada (1982: Table 4-1).

resource owner?" Unfortunately there are no easy answers. In practice there is a trade-off between efficiency and rent transfer; if an attempt is made to transfer 100 percent of the rents, the incentives for optimization by the resource producer are removed and total rent is diminished. Thus, it all comes down to the art of taxation, as described by Jean Baptiste Colbert, which "consists of plucking the goose so as to obtain the largest amount of feathers with the least amount of hissing." Based on Alberta experience it would appear that this translates into a maximum transfer of just over 50 percent of the calculated rents.

As to the capture methods, there are three main schemes that can be used: ex-ante, ex-post and participatory (Anderson, 1985). In the ex-ante method producers bid for resource rights in a competitive auction. While this system is commonly used to allocate exploration rights, it does not typically form the main rent collection method. In practice there are numerous problems associated with its use. First, it does not work efficiently if there is either a lack of competition or a lack of sufficient information to accurately assess the probabilities of discovery. Second, it requires predictable energy prices; that is, it would not capture the windfall gains associated with unexpected increases in energy prices or the reductions occurring in the event of unexpected drops in energy prices.

The ex-post method involves the application of royalties or taxes on output and/or income arising from production of the resource. While there are many variations of this most commonly used method, most are rather inefficient and they deal with the problem outlined in the first part of this section in a rather ad hoc manner (Anderson, 1985: 161-172). There are, however, some examples of efficient ex-post systems. One is the resource rent tax outlined by Garnaut and Ross (1975; 1979), which taxes rent only after revenue has been sufficient to cover all costs including a normal rate of return on capital.[16]

In the participatory approach the resource owner (the province) becomes a partner in the exploration and development of the energy resource and shares in both the revenues and costs. In general, this method is only practical when there are a small number of firms involved and when the project is very large and risky.

In summary, although much more is known today about the measurement and efficient capture of energy rents in the early 1970s, there are still sizeable gaps. We do know that these rents are large but the methods and tools necessary to measure them accurately have yet to be developed. Similarly, there is no perfect method for capturing energy rents, or even determining the amount that can be optimally transferred to the resource owner. There are signs, however, that there is at least a better understanding of the issues than a decade ago. Perhaps this bodes well for rent collection schemes in Canada, which are both more efficient and more equitable than those employed in the past.

Energy Policy and the Use of Energy Rents

From a regional perspective, the energy policies which were implemented in Canada in the post-1973 period easily rank among the most significant in recent history. At the provincial level, oil and gas royalties were raised substantially and the resulting revenues became the cornerstone for long-term financial security and "province-building" aspirations. At the national level, the initial thrust was to hold down domestic oil and gas prices but this was later followed by attempts to greatly increase Ottawa's share of oil and gas rents and to Canadianize the industry. Collectively, these national policies produced the most massive interregional transfer in Canadian history and, to say the least, they will not be remembered for their efficiency or effectiveness in terms of timing, execution or results. Indeed, the National Energy Program, which was instituted by the federal government in October of 1980, achieved unprecedented levels of regional discrimination, heavy-handedness in the treatment of provincial resource ownership, and discrimination between petroleum rents and rents on other resources.

On the positive side, the energy policy debates and developments of the 1970s did serve to highlight the issues associated with the distribution and use of resource rents in Canada. The purpose of this section is to summarize these issues and the results of the related research. In order to keep the survey manageable, the implications of the various policies are outlined first from a regional perspective and then from a national perspective.

The Regional View

Given the existence of economic rents associated with energy or other natural resource production, and prior decisions about federal/provincial revenue sharing, the main issues from a regional perspective concern the manner in which these rents are to be distributed. Here there are four main approaches: the rents can be left to producers; resource prices can be kept at artificially low levels; the rents can be appropriated by the provincial government and distributed via the tax/expenditure system; or, the rents can be collected by the provincial government and distributed to residents in the form of a resource dividend.

The first approach essentially amounts to letting the market system distribute the rents. While it has sometimes been used in Canada, [17] it has not generally been viewed as being appropriate for energy resources. In the case of oil and gas for example, the magnitude of the rents involved, along with the large foreign ownership and control of the industry, have served to produce a strong incentive to avoid this market solution. The second method involving artificially low prices has been, and is, frequently used, although quite often it has been imposed over the objections of the provinces. It is fairly easy to see that, in the case where exports of the resources are significant, it would not generally be in the interest of the regional government to opt for this approach.[18] Not surprisingly, most of the recent examples such as artificially low domestic prices for oil and gas, or the artificially low prices received by Newfoundland for its hydro-electricity, represent involuntary behaviour of one sort or another. In cases where a large proportion of the energy produced in the region is for local consumption it is not uncommon for regional governments to opt for artificially low prices. For example, as noted by Zucker and Jenkins (1984) the very substantial rents on hydro-electricity produced in Quebec, Ontario, Manitoba and British Columbia are voluntarily distributed in this manner.

The distribution of rents via the tax/expenditure system involves the capture of the rents by the regional government and their subsequent use to lower taxes and/or raise expenditures in the form of public goods and services or transfers to consumers or producers in the region. Prior to 1976 when the Alberta Heritage Savings Trust Fund (AHSTF) was established, virtually all of the oil and gas rents captured by the provincial government were distributed in this manner. After this date, however, 30 percent of these revenues were to be allocated to the AHSTF, with the remainder being distributed through the tax/expenditure system.[19] Although this and other similar funds (such as that in Saskatchewan) do represent a way of smoothing out any long-term or secular shifts in provincial revenues and expenditures associated with a declining resource base, they also form a powerful vehicle for regional development. In addition to being non-taxable, they allow regional governments to become more directly involved in regional development and they reduce the pressures for greater expenditure that are typically associated with a growing surplus in the general revenue account.

The final approach represents the "privatization" of the province's rent collections by distributing dividends to provincial residents as owners of the commonly held resource. The only time this method has been used in Canada was in Alberta in 1957 when the Social Credit government declared a $20 dividend for every Albertan.

It is somewhat difficult to evaluate these various alternatives because it is not clear what the ultimate objectives of a regional (provincial) government are or should be. Some possibilities include: political expediency; maximizing efficiency as measured by the average standard of living of provincial residents; maximizing economic opportunities and growth in the region (province-building); optimizing in terms of population size and hence political power on the national stage; or simply "satisficing" in these and other areas. Unfortunately no single method of rent distribution seems capable of satisfying all of these objectives.

It is probably safe to say that the dominant objective of most provincial governments, particularly those in the peripheral regions, is that of province-building (Pratt, 1977). Whether it is to create a larger and more stable economy, reduce the vulnerability of a declining resource base, or end the domination of Central Canadian economic and political interests, this view dictates policies aimed at producing extensive growth in the regional economy and diversifying the economic structure.

From this vantage point the work by Norrie and Percy (1982; 1983) indicates that the distribution of rents through the tax/expenditure system does not have significant effects on both the size and structure of a small regional economy. Using a small general equilibrium model and a benchmark case involving only the pure price effects associated with higher energy prices, they show that a province-building strategy financed by the energy rents can produce greater extensive growth as well as a limited degree of diversification. The full effects, however, depend on both the type of policies used and the significance of agglomeration economies. In general, the largest effects occur when resource rents are used to reduce personal taxes rather than to expand the government sector,[20] and when there are large agglomeration economies. Except in the case where agglomeration economies are large, however, the increased growth and diversification that is produced results in lower real per capita incomes than potentially available in the absence of province-building. Since this result is highly dependent on the magnitudes of fiscally-induced migration and agglomeration economies, both of which represent areas of relative ignorance from an empirical standpoint, it is difficult to assess the significance of any such "efficiency costs" of province-building strategies (Mansell, 1980).

On the basis of both efficiency and equity considerations McMillan and Norrie (1980) argue that all energy rents should be privatized. Aside from removing the spectre of both massive amounts of fiscally-induced migration and large government subsidies for inefficient or uneconomical activities, McMillan and Norrie suggest that the privatization scheme would produce a more equitable distribution of the rents; enhance public accountability (see also Pratt and Tupper, 1980); stimulate private capital accumulation; and, generally promote efficiency based on decision-making by individuals. In addition to the considerable practical difficulties associated with such a scheme,[21] other concerns have been raised by Scarfe and Powrie (1980). For example, it is suggested that privatization might result in a less than optimal rate of saving and exacerbate the boom-bust cycle associated with a dependency on depletable resources.

The other two methods of distributing rents within a regional economy have not received much attention in the literature and hence the best that can be offered at this point are some rather general observations. First, in the case of energy resources, the market solution (that is, leaving the rents to producers) cannot be relied upon to produce an equitable or efficient rent distribution. Producing an equitable distribution is not one of the virtues of the market system. Further, the foreign ownership, high mobility of funds, abundance of externalities, and other market imperfections that characterize the energy sector leave the efficiency of such an outcome in serious doubt. Second, as demonstrated by numerous studies done throughout the 1970s (for example, see Watkins, 1981) the approach involving artificially low energy prices is notoriously inefficient. In effect it amounts to subsidizing energy-intensive industries in the region (or energy users in other regions) and generally provides the wrong signals to both energy consumers and producers. Finally, if the objective is to encourage growth or diversification in the region, subsidized energy prices represent a rather ineffective policy instrument.

The National View

The rapid increases in petroleum prices and rents during the 1970s touched a variety of fundamental issues concerning the meaning of Canadian federalism and the division of powers between federal and provincial levels of government. Most of these in fact involved political rather than economic arguments:

what historical and legal rights does each level of government have to energy rents, how far do provincial ownership rights extend, and what claims do residents in other regions have on energy rents in a given region? These have been discussed elsewhere (Simeon, 1980) and, in any case, as noted by John Helliwell, "nothing is 'right' when it comes to the political division of authority and revenues." All that really needs to be said is that the traditional domination by Central Canadian interests in political decisions of this type provides a strong case for province-building strategies in the peripheral regions.

Although they have not been the dominant criteria in policy decisions, the interregional implications of various energy policies and rent distribution schemes have nevertheless formed an important part of the debates. For the most part, work in this area has centered on the effects in terms of overall economic efficiency, the fiscal equalization system, and trade-offs between efficiency and equity. This section represents a modest attempt to summarize both the economic issues involved and the research in this area.

It should be noted at the outset that many of these issues have been clouded by the tendency to address each one in isolation of the others, even though they tend to be closely intertwined. This is particularly evident in the dichotomous treatments of resource pricing and revenue sharing. For example, as noted by Norrie (1981), it is entirely inappropriate to exclude federal transfers via artificially low oil and gas prices in the calculation of the "true" federal share of oil and gas rents. Indeed, when the proper adjustments are made, the actual federal share of oil and gas revenues in the early 1980s had risen to over 50 percent, a figure substantially larger than that generally quoted (Courchene, 1981).

One of the most entrenched aspects of Canadian federalism is that fiscal capacities of the various provincial governments should be equalized so that access to public services is more or less independent of the province of residency. From this vantage point, the existence of large regional disparities in energy or other resource revenues raises the important issue of to what extent and by what method these revenues should be equalized. In the view of Boadway, Flatters and Leblanc (1983) there are two main economic rationales for equalizing resource revenues. First, economic efficiency requires that the marginal product of labour be equalized across all regions. Given the existence of fiscally-induced migration, this will only occur if all regional net fiscal benefits are equalized. Second, the principle of horizontal equity (that is, that equals, or residents of the various regions, be treated equally) also requires that these net fiscal benefits be equalized across regions. While the extent to which resource revenues need to be equalized depends on whether the broad or narrow-based view of horizontal equity is used, as well as the type of equalization formula employed, these authors generally argue that equalization of about 25 percent of such revenues (a proportion roughly equal to the federal income tax rate) represents a feasible and efficient solution. Other methods of determining the proportion of resource revenues to be equalized have been outlined by Gainer and Powrie (1975) and Powrie (1981).

At the same time there are equally convincing efficiency arguments against such equalization, and against fiscal equalization in general. First, the efficiency arguments previously noted implicitly assume that not only does interregional migration in Canada represents a socially efficient adjustment mechanism, but also that policies in other areas have been and are "location-neutral" on balance, so that the starting point is an "optimal" distribution of industry and people from a national efficiency viewpoint. As indicated by Mansell (1980) these are rather tenuous assumptions. Second, as mentioned earlier, the evidence of significant levels of fiscally-induced migration arising from the existence of a resource-rent-fund in a particular region is unconvincing. Moreover, as noted by Norrie and Percy (1982:87), the prediction that the allocation of resource revenues or rents through the tax base causes the resource-rich region to become a low-wage region is far from certain. Finally, as Courchene (1978:1981) has argued, there are substantial efficiency costs associated with the whole system of equalization in Canada. For example, the various place-oriented (versus, people-oriented) transfers impede the process of interregional adjustment necessary for reductions in regional disparities and improvements in regional and national efficiency. In addition, they create a transfer dependency by reducing both the incentives for policies aimed at promoting the growth of market incomes in the region and the political costs of policies which exacerbate regional economic disparities.

Perhaps one of the most robust conclusions to come out of the research on the interregional and national impacts of alternative energy policy and rent distribution schemes is that the transfer of resource rents through artificially low resource prices is notoriously inefficient. This approach, which formed the cornerstone of national oil and gas policies during the last decade, produces allocative losses on both the demand and supply side. Watkins (1981) estimates that this feature of the National

Energy Program produced a deadweight loss of about $3.4 billion in 1984 alone. In addition, such policies are tantamount to a hidden or disguised transfer which, although politically expedient, serve to cloud the efficiency versus equity issues.

Finally, as noted by Norrie (1981), most of the other reasons typically given for artificially low energy prices are invalid. As he demonstrates, the argument that energy prices are only temporarily high makes no economic sense since the relevant opportunity cost of Canadian consumption is the world price; contrary to the view that higher energy prices would affect low-income earners disproportionately, the evidence indicates that it is the high-income earners that benefit both absolutely and proportionately from low energy prices; keeping energy prices low is an inefficient method of preventing windfalls to foreigners (the use of the taxation system is far more efficient), and it is not clear that such a policy reduces inflation over the long run; maintaining low energy prices does not provide a significant competitive edge for industries in other regions but, rather, only subsidizes a few energy-intensive industries which are largely foreign owned; and, it is inconceivable that higher energy prices would significantly increase the exchange rate and lead to a case of the Dutch disease (that is, de-industrialization) for Ontario.

In conclusion, it would appear that while there are strong economic arguments against distribution policies involving artificially low prices, there remains considerable uncertainty about the full regional implications of other schemes such as fiscal equalization. While there are strong equity arguments for reducing the disparities in energy rents through this approach, there are also many efficiency arguments against such policies. Perhaps what is most evident is that the systems presently used are terribly discriminatory and ad hoc – in particular, oil and gas rents are treated as a "special case" while those on other types of energy or other natural resources are ignored.

Summary

The events of the 1970s clearly demonstrated the important implications of energy policy, prices and rents for regional growth and development in Canada. These, combined with the heated policy debates that ensued, motivated a considerable volume of research, the results of which are summarized in this paper.

Using Alberta as an example, it was argued that the effects of the energy sector during the development stage closely follow those predicted by the staple theory. More importantly, this sector has many of the attributes of a classic "motor" industry, and has the ability to dramatically alter the structure and character of a small regional economy even though the direct employment impacts are typically small. Beyond the development phase, significant changes in energy prices and policies can generate substantial macro effects in the region through investment and the operation of interindustry, Keynesian and population multipliers. Further, rapid growth of the energy sector such as that which occurred in Alberta in the post-1973 period does appear to produce sectoral shifts of the de-industrialization variety. The evidence concerning the interregional impacts of such a development are less clear. While rising energy prices do generate a shift of economic activity and population from energy deficit to the energy surplus regions, it is not clear that such shifts imply significant secular changes in the regional structure of wages or per capita income.

The rent issue which became the focus of energy policy during the 1970s was shown to be fraught with complexities and inconsistencies which are only now becoming understood by policymakers. Rents are difficult to define and measure, and there is no perfect method for capturing them or even determining the amount that can be optimally transferred to the resource owner. What is most evident is that energy rents (and natural resource rents generally) are substantial, and that the tendency for governments to focus on some but not others is discriminatory, inefficient and inequitable.

The regional and interregional implication of four alternative rent distribution schemes (the market solution, artificially low prices, distribution via the tax/expenditure system, and privatization) were outlined. From the viewpoint of province-building, distribution via the tax/expenditure system would appear to produce the greatest amount of extensive growth as well as a limited degree of diversification. With regard to the interregional implications, most of the research has been focussed on the effects of the various systems on overall efficiency, the fiscal equalization system and trade-offs between efficiency and equity. In terms of these considerations, there appear to be strong arguments against the use of artificially low prices as a method of rent distribution. There remains considerable uncertainty, however, about the full regional implications of the other systems. Finally, although the recent Energy Accords represent significant improvements in terms of the general treatment of oil and gas rents in Canada, there remains considerable room for improvements in overall policies concerning natural resource rents in Canada.

Footnotes

1. For example, using Alberta statistics for 1983, capital stock per worker in Mining (primarily oil and gas) was $597,000 compared to $145,000 for Manufacturing, while output (Gross Domestic Product) per worker was $199,000 for Mining versus $39,000 for Manufacturing (Alberta Bureau of Statistics, 1984:Table 12 and 13; 1985:Table 19).

2. These comparisons are based on data in series A2-14 and F91-102 in Leacy, 1983.

3. By the early 1960s the petroleum industry had emerged as the principal source of value added in the province. In 1983 it directly accounted for one-third of total Alberta output (Alberta Bureau of Statistics, 1984:Table 13). Note that royalties have been included in mining sector output.

4. Perroux (1955) suggests that the motor industries in regional development tend to be those of large scale, where individual factors of production are separated from each other, where capital is concentrated, and where there is a high degree of technical division of labour and specialization.

5. This has usually been expressed as charges that discriminatory federal tariff, transportation and monetary policies are the cause of various economic ills in Alberta or the other prairie provinces. As indicated by Norrie (1978), however, the real causes are related more to the operation of the market system than to discriminatory federal policies. The National Energy Program implemented in 1980 represents an important exception to this assessment.

6. The Texas and the Alberta economies both developed around agriculture and petroleum. Since they are widely separated geographically, are only remotely connected by trade, and evolved within different political and social contexts, the remarkable similarities in terms of industrial structure, character and performance are interpreted as a loose test of this model of resource-based determinism.

7. In fact there were also declines in nominal oil and gas prices over much of this period. For example, the wellhead price of

Alberta crude oil in 1962 was $2.62 compared to $3.20 in 1947 (Watkins, 1977:97).

8. For example, the National Oil Policy of 1958 created a protected market (west of the Ottawa River Valley) for Western crude oil, and generous depletion allowances were provided for the industry. At the provincial level, prorationing and a variety of measures aimed at encouraging development and maximizing efficiency were also implemented.

9. Whereas the interindustry multiplier process is based upon the expansion of output as firms respond to direct and indirect increases in input requirements, the Keynesian multiplier is associated with the growth in final demand (in the form of consumption, investment and government expenditures) arising from increases in income.

10. About 90 percent of the variations in migration to/from the province can be "explained" by purely economic factors such as regional differences in unemployment rates, employment growth and wage and income levels (Kwaczek and Mansell, 1980).

11. That is, because interregional migration is highly selective in terms of age, skills and education, high rates of in-migration tend to produce low dependency ratios; high labour force participation rates; and, a relatively young productive and mobile labour force.

12. This literature focusses on mechanisms through which a boom in one sector can lead to de-industrialization. For examples see Norrie and Percy (1982:18).

13. The structure and functioning of MAE 2.0 is described in Mansell et al., *Model of the Alberta Economy, Version 2.0*, Project Papers No. 1 to 10.

14. Between 1971 and 1981 the index of prices for Alberta exports rose 475 percent while the index of the prices for imports to the province rose 163 percent (Alberta Bureau of Statistics, 1984:Table 4).

15. See Anderson (1985) for an excellent discussion of the definition and measurement of energy rents.

16. For other variations on this approach see Samuelson (1964) and Mackenzie and Bilodeau (1979).

17. For example, most of the rents associated with offshore fisheries are left to the "producer." In this case, however, they are usually dissipated through over-exploitation of the resource.

18. There is, however, the possibility of differential pricing whereby exports from the region are at market-determined prices while consumers within the region pay lower prices.

19. In recent years this contribution to the AHSTF has been significantly reduced because of greater provincial revenue needs.

20. These differences occur because expansion of the government sector produces some crowding-out of other sectors.

21. The most obvious concern the definition of a resident. For example, are dividends to be given to all who resided in the province on a particular date, including children, or all present and future residents, including citizens of other countries?

References

Alberta Bureau of Statistics, 1984. *Alberta Economic Accounts, 1983*, Edmonton.

_____________, 1985. *Alberta Statistical Review, First Quarter 1985*, Edmonton.

Anderson, F.J., 1985. *Natural Resources in Canada: Economic Theory and Policy*. Toronto: Methuen, 1985.

Boadway, R. and F. Flatters, 1982. *Equalization in a Federal State: An Economic Analysis*, a study prepared for the Economic Council of Canada. Ottawa: Supply and Services.

_____________, F. Flatters and A. Leblanc, 1983. "Revenue Sharing and the Equalization of Natural Resources Revenues." *Canadian Public Policy*, 9, 2:174-180.

Bradfield, M., 1976. "Necessary and Sufficient Conditions to Explain Equilibrium Regional Wage Differentials." *Journal of Regional Science* 16, 2:247-255.

Cairns, Alan C., 1977. "The Governments and Societies of Canadian Federalism." *Canadian Journal of Political Science*, 10, 4:695-725.

Cairns, R.D., 1977. "Ricardian Rent and Manitoba's Mining Royalty." *Canadian Tax Journal*, 25.

_____________ and H.G. Grubel, 1980. "Ricardian Rent and Minerals Industry: The Debate Concludes." *Canadian Tax Journal*, 28.

Copithorne, L., 1979. "Resources and Regional Disparities: A Skeptical View." *Canadian Public Policy* 5, 2:181-194.

Courchene, T.J., 1970. "Interprovincial Migration and Economic Adjustment." *Canadian Journal of Economics*, 3:550-576.

_____________, 1978. "Avenues of Adjustment: The Transfer System and Regional Disparities." In M.Walker (ed.), *Canadian Confederation at the Crossroads*. Vancouver: The Fraser Institute.

_____________, 1981a. "The National Energy Program and Fiscal Federalism: Some Observations." In G.C. Watkins and M.A. Walker (eds), *Reaction: The National Energy Program*. Vancouver: The Fraser Institute.

_____________, 1981b. "A Market Perspective on Regional Disparities." *Canadian Pubic Policy* 7, 4:506-518.

_____________. and J.R. Melvin, 1980. "Energy Revenues: Consequences for the Rest of Canada." *Canadian Public Policy* 6, Supplement:192-204.

Devarajan, S. and A.C. Fisher, 1982. "Exploration and Scarcity." *Journal of Political Economy*, 40:1279-1290.

Economic Council of Canada, 1980. *Newfoundland: From Dependency to Self-Reliance*. Ottawa: Supply and Services.

_____________, 1982. *Financing Confederation*. Ottawa: Supply and Services.

Fisher, A.C., 1979. "Measures of Natural Resources Scarcity." In V.K. Smith (ed.), *Scarcity and Growth Reconsidered*. Baltimore: Johns Hopkins University Press.

Gainer, W.D. and T.L. Powrie, 1975. "Pubic Revenue from Canadian Crude Petroleum Production." *Canadian Public Policy* 1, 1:1-12.

Grant. E.K. and J. Vanderkamp, 1980. "The Effects of Migration on Income: A Micro Study with Canadian Data 1965-71." *Canadian Journal of Economics* 13, 3:381-406.

Grubel, H.G., 1979. "Ricardian Rent and the Minerals Industry: A Comment." *Canadian Tax Journal*, 27.

_____________ and S. Sidney Smith, 1975. "The Taxation of Windfall Gains on Stocks of Natural Resources." *Canadian Public Policy* 1, 1:13-29.

Hanson, Eric J., 1958. *Dynamic Decade: The Evolution and Effects of the Oil Industry in Alberta*. Toronto: McClelland and Stewart.

Lasserre, P., 1985. "Discovery Costs as a Measure of Rent." *Canadian Journal of Economics* 18, 3:474-483.

Leacy, F.H. (ed.), 1983. *Historical Statistics of Canada*, 2nd edition. Ottawa: Supply and Service.

Mackenzie, B. and M. Bilodeau, 1979. *Effects of Taxation on Base Metal Mining in Canada*. Kingston: Queen's University Centre for Resource Studies.

Mansell, R.L., 1975. *Canadian Regional Inequality: The Process of Adjustment*. Unpublished Ph.D. dissertation, University of Alberta.

____________, 1980. "Comments on Province-Building and Industrial Diversification." *Canadian Public Policy* 6, Supplement:231-234.

____________, 1981. "Texas and Alberta: A Comparison of Regional Economies." *Texas Business Review* 55, 6:241-246.

____________ and R.W. Wright, 1978. "A Neoclassical Model for Evaluating Large Scale Impacts in the Regional Economy." *Growth and Change*.

____________ and A.S. Kwaczek, 1980. *Model of the Alberta Economy*, MAE 2.0, project papers 1-10.

____________ and L. Anderson, 1984. "Energy Prices and Economic Growth." *Review of Regional Economics and Business*.

____________ and L.W. Copithorne, 1985. "Canadian Regional Economic Disparities: A Survey," Royal Commission Monographs.

McMillan, M.L. and K.H. Norrie, 1980. "Province-Building vs. a Rentier Society." *Canadian Public Policy* 6, Supplement:211-224.

Mobil Oil Corporation, 1985. *Hibernia Environmental Impact Statement*. St. John's, Newfoundland.

Norrie, K.H., 1972. "Some Comments on Prairie Economic Alienation," *Canadian Public Policy* 7, 2:211-224.

______________, 1981. "National Energy Program: A Western Perspective" In G.C. Watkins and M. Walker (eds), *Reaction: The National Energy Program*, Vancouver: Fraser Institute, 1981.

______________, 1984. "A Regional Economic Overview of the West Since 1945." In A.W. Rasporich (ed.), *The Making of the Modern West: Western Canada Since 1945*. Calgary: University of Calgary Press.

______________ and M.B. Percy, 1981. *Westward Shift and Interregional Adjustment: A Preliminary Analysis*. Economic Council of Canada, Discussion Paper No. 201. Ottawa: Supply and Services.

______________, 1982. *Energy Price Increases, Economic Rents and Industrial Structure in a Small Regional Economy*. Economic Council of Canada, Discussion Paper No. 220. Ottawa: Supply and Services.

______________, 1983. *Economic Rents, Province Building and Interregional Adjustment: A Two Region General Equilibrium Analysis*. Economic Council of Canada, Discussion Paper No. 230. Ottawa: Supply and Services.

Perroux, F., 1970. "Note on the Concept of 'Growth Poles.'" In D.L. McKee, R.D. Dean and W.H. Leahy (eds) *Regional Economics: Theory and Practice*. New York: The Free Press.

Powrie, T.L., 1981. "Natural Resources Revenues and Federal-Provincial Fiscal Arrangements." *Canadian Tax Journal*, 29:499-502.

Pratt, L., 1977. "The State and Province-Building: Alberta's Development Strategy." In L. Panitch (ed.) *The Canadian State: Political Economy and Political Power*. Toronto: University of Toronto Press.

______________ and A. Tupper, 1980. "The Politics of Accountability: Executive Discretion and Democratic Control." *Canadian Public Policy*, 6, Supplement:254-264.

Richard, John, 1985. "The Staple Debates." In D. Cameron (ed.) *Explorations in Canadian Economic History: Essays in*

Honour of Irene M. Spry. Ottawa: University of Ottawa Press.

______________ and Larry Pratt, 1979. *Prairie Capitalism: Power and Influence in the New West*. Toronto: McClelland and Stewart.

Samuelson, P.A., 1964. "Tax Deductibility of Economic Depreciation to Insure Invariant Valuations." *Journal of Political Economy*, 72:604-606.

Scarfe, B.L. and T.L. Powrie, 1980. "The Optimal Savings Question: An Alberta Perspective," *Canadian Public Policy* 6, Supplement:166-176.

Simeon, R., 1980. "Natural Resources Revenues and Canadian Federalism: A Survey of the Issues." *Canadian Public Policy*, 6, Supplement:182-191.

Stabler, J.C., 1968. "Exports and Evolution: The Process of Regional Change." *Land Economics*, 44:11-23.

Uhler, R.S., 1977. "Economic Concepts of Petroleum Energy Supply." In G.C. Watkins and M. Walker (eds) *Oil in the Seventies*. Vancouver: The Fraser Institute.

Vanderkamp, J., 1985. "Efficiency of the Interregional Adjustment Process." Royal Commission Monograph.

Watkins, G.C., 1977. "Canadian Oil and Gas Pricing." In G.C. Watkins and M. Walker (eds), *Oil in the Seventies*. Vancouver: The Fraser Institute.

______________, 1981. "Mr. Lalonde and the Price Mechanism: Or Never the Twain Shall Meet." In G.C. Watkins and M. Walker (eds), *Reaction: The National Energy Program*. Vancouver: The Fraser Institute.

Watkins, M.H., 1963. "A Staple Theory of Economic Growth." *Canadian Journal of Economics and Political Science*, 29, 2:141-158.

Winer, S.L. and D. Gauthier, 1982. *Internal Migration and Fiscal Structure*. Study prepared for the Economic Council of Canada. Ottawa: Supply and Services.

Wrage,P., 1981. "The Effects of Internal Migration on Regional Wage and Unemployment Disparities in Canada." *Journal of Regional Science*, 21, 1:51-63.

Zuker, R.C. and G.P. Jenkins, 1984. *Blue Gold: Hydro-Electric Rent in Canada*. Study prepared for the Economic Council of Canada. Ottawa: Supply and Services.

Appendix 1
Estimates of the Net Federal Fiscal Balance by Region, 1971 and 1981 (in millions of dollars)

		Atl.	Que.	Ont.	Sask./Man.	Alta.	B.C.
Net Federal Gov't. Balance[1]	1971	-1209	190	1734	-561	106	324
	1981	-6358	-5139	1110	-1231	4918	1321
Imputed Tax on Oil & Gas Production[2]	1971	0	-.08	-4.07	-23.04	-101.42	-13.38
	1981	.03	0	15.98	358.83	6024.16	266.78
Imputed Subsidies on Oil & Gas Consumption[3]	1971	-0	-2	-71.02	-19.46	-17.17	-22.35
	1981	123.03	1229.83	2549.63	410.61	1470.95	881.73
Total Net Federal Balance[4]	1971	-1209	191.92	1800.95	-564.58	21.75	332.97
	1981	-6481	-6368.83	-1423.65	-1282.76	9471.21	706.05

Notes:

1. Computed as total Federal revenues collected in region minus total Federal expenditures (including transfers) in region. Data from Statistics Canada, *Provincial Economic Accounts* (Cat. No. 13-213, Table 3).
2. These imputed taxes arise from the difference between market prices (netted back to the region) and actual prices received by producers. They are calculated from estimates of this price difference and oil and gas production by region.
3. These imputed subsidies arise from the difference between market prices and the prices actually paid by domestic consumers. They are calculated from estimates of this price difference and oil and gas consumption by region. See Economic Council of Canada, *Financing Confederation* (1982), for discussion of methodology.
4. Total Net Federal Balance equals Net Federal Balance plus taxes on production minus subsidies on consumption.

Chapter 9:

Atlantic Provinces Offshore Development: Some Issues *

A. Gordon DeWolf

Introduction

Development of oil and gas off the coast of the Atlantic provinces is expected to have a beneficial economic impact upon the region in general, and upon Nova Scotia and Newfoundland, in particular (DeWolf, 1983; DeWolf *et al*, 1982; Eglington and Uffelman, 1984; Socio-Economic Review Panel, 1983; Voyer, 1983). Development will, however, raise a number of issues, and there are still questions concerning the nature and timing of projects. The issues surrounding the development of offshore resources extend beyond those associated with most major project developments and may be seen to have important implications for fiscal arrangements between the federal and provincial governments, and, more generally, for federal-provincial relations. Within Canada, the performance of the Alberta economy can be viewed as an example of what might happen to the Atlantic provinces' economy should offshore development proceed on a large scale. The experience of Scotland and Norway with offshore development can be viewed in the same light.

In the period after World War II, and particularly since 1971 (see Table 1), the Alberta economy, driven by the rapid growth of the oil and gas industry, underwent major changes. The province's population increased rapidly, largely as a result of migration (See Termote's discussion in Chapter 2 and Mansell's in Chapter 8). Measured as a percent of the national average, over the period 1971 to 1980, personal income per capita increased by over 12 percentage points (Polèse, Chapter 1), taking Alberta from a province with below average incomes to the province with the highest in Canada. Will these changes also be experienced by the Atlantic provinces?

---

* The views expressed are those of the author and do not represent the views of the Government of Canada.

Table 1
Some Indicators of Alberta's Economic Performance, 1971-1983

Population Increase ('000)	*1971-1976*		*1976-1981*	
– Total	210		400	
– Natural Growth	96		124	
– Net Interprovincial Migration	68		211	
– Net International Migration	47		65	
Personal Income Per Capita	*1971*	*1976*	*1980*	*1983*
(Percent of national average)	98.9	102.6	111.3	106.0
Percentage Distribution of GNP (at Factor Cost) and Employment	*% of GDP*		*% of Employment*	
	1971	*1981*	*1971*	*1981*
Mining	19	31	4	6

Sources: Mansell (Chapter 8); Polèse (Chapter 1); Termote (Chapter 2).

This paper explores in a very broad and preliminary way some of the impacts that may occur and some of the issues that may arise from the development of oil and gas off the coast of the Atlantic provinces. The following section of the paper reviews the development of the offshore industry in Nova Scotia and Newfoundland. This is followed by a very brief overview of rates of return for the two projects that are closest to development (Venture and Hibernia), and then by an outline of the expected industrial and employment impacts of offshore development on the Atlantic provinces. Issues arising from the division of rents between governments are then dealt with.

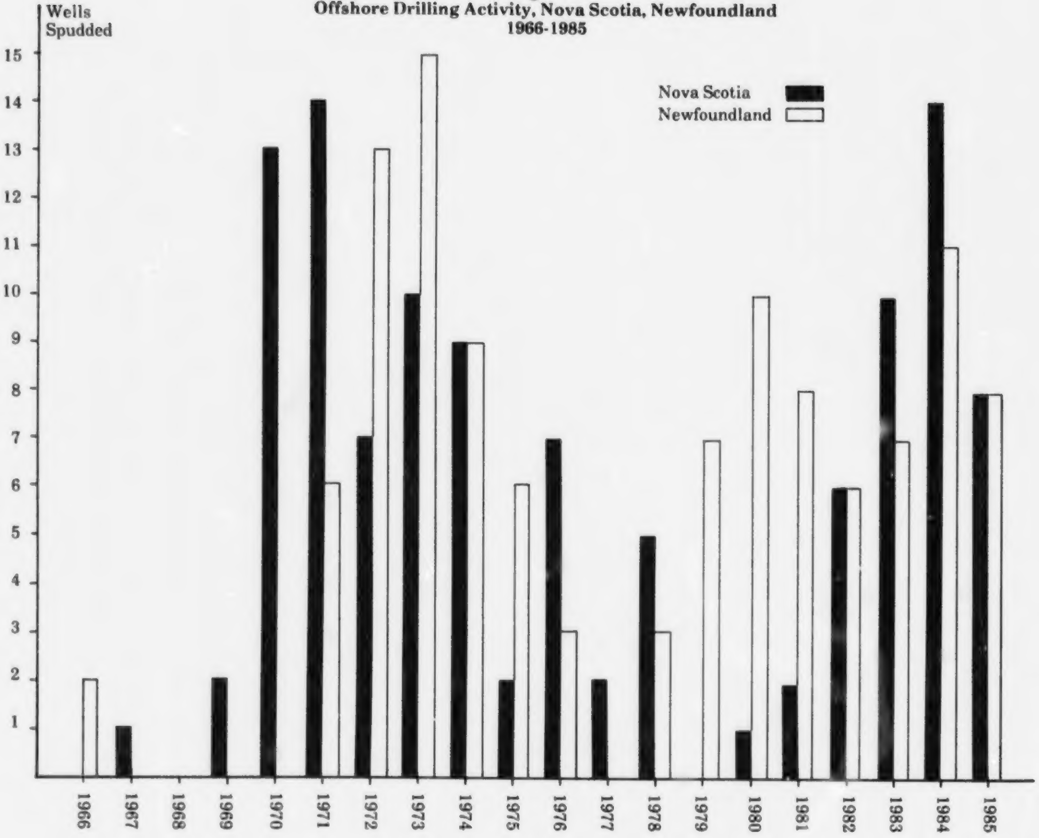
Status of the Atlantic Offshore

Offshore drilling began in 1966 when two wells were sunk on the Grand Banks off Newfoundland. A year later, Mobil drilled its Sable Island C-67 well on Sable Island in the Nova Scotia offshore region. Since 1967, 117 wells have been "spudded" in the Nova Scotia offshore region (Scotian Shelf) and 113 wells in the Newfoundland offshore region, which includes the Labrador Sea as well as the Grand Banks (see Figure 1)[1]. Two phases are apparent. The first covers the period 1966 to 1978 and the second 1979 to 1985. During the first phase, the presence of offshore hydrocarbons was confirmed, but no large discoveries were made. As a result, exploration activity declined after a peak in 1971 off Nova Scotia and in 1973 off Newfoundland. After 1979, exploration activity increased, peaking in 1984. It remains to be seen whether the second phase will follow the same pattern as the first phase.

What have been the results? A total of 14 gas and oil (but largely gas) discoveries on the Scotian Shelf and six oil discoveries in the Newfoundland offshore region have been classified as significant, meaning that the discoveries have the potential to be commercially viable. If a field is classified as significant, the operator retains the drilling rights to the field (i.e., the area is not relinquished as is normally the case) and the operator may be required to drill one or more delineation wells in order to obtain additional information about the field.

Of the 20 discoveries off the East Coast, two (the Venture gas field off Nova Scotia and the Hibernia oil field off Newfoundland) are closest to development. Both fields were discovered as a result of drilling activity in 1979, at a time when the prospect for continued exploration activity off the East Coast was not very promising. Most discoveries of oil and gas off eastern Canada have been made since 1979. A number of factors are responsible for this. First of all, after nearly 15 years of not very successful exploration, companies were encouraged by the discovery of Venture and Hibernia. Secondly, the 1979 OPEC induced oil price increases raised the expected returns from exploration. Thirdly, Petroleum Incentive Payments, introduced as part of the National Energy Program in the fall of 1980, reduced the private cost of exploration. Fourthly, after 1979, with the advent of larger rigs, wells were drilled to much greater depths than previously, resulting in the discovery of oil and gas bearing structures. Other factors which were important to the continued exploration activity after 1979 were the success rate of discoveries and, in Nova Scotia (but not in Newfoundland), the conclusion of an agreement between the provincial and federal

Figure 1
Offshore Drilling Activity, Nova Scotia, Newfoundland
1966-1985



governments on managing and sharing the revenue from offshore resources.

According to the Canada Oil and Gas Lands Administration (COGLA), gas resources of 122.6 billion m^3 (4.3 trillion $ft.^3$) have been discovered in the Nova Scotia offshore region and 145.2 billion m^3 (5.1 trillion $ft.^3$) in the Newfoundland offshore region (COGLA, 1984). Discovered oil resources are given as 16.7 million m^3 (0.1 billion bbls.) for the Nova Scotia offshore region and 159.9 (1.0 billion bbls.) for the Newfoundland offshore region. The ultimate potential for the Eastern Canada offshore region is 2,423 billion m^3 (85 billion $ft.^3$) of gas and 1,877 million m^3 (11.8 billion bbls.) of oil, according to the Geological Survey of Canada (Proctor *et al*, 1984). In Table 2, discovered and potential resources of the Canadian East Coast are compared to the Norwegian and United Kingdom sectors of the North Sea. While potential resources of the Eastern Canada offshore region are roughly equivalent to the potential resources of either the Norwegian or United Kingdom sectors of the North Sea, discovered resources are only a fraction of what has been discovered and developed in either the Norwegian or United Kingdom sectors.

While development of offshore resources is expected to result in large regional expenditures and impacts, it should also be recognized that exploration has generated considerable economic activity within the region. In 1984, for example, operators spent a total of $618 million on seismic surveys and drilling off Nova Scotia and $514 million off Newfoundland (COGLA, 1984: 38-40). Not all of these expenditures generated economic activity within the Atlantic provinces, however. Day rates, that is the cost of renting rigs, represented about 57 percent of drilling expenditures (COGLA, 1984: 20) and were paid directly to external, mainly American, companies. As well, many specialized services had to be brought in from outside the region. The regional content of exploration expenditures in 1984 was estimated at 25 percent (COGLA, 1984: 20).

A number of developments occurred during the early 1980s to ensure that industrial and labour benefits accrued to Nova Scotia and Newfoundland. First of all, with the assistance of training programs provided by government departments such as the Canada Employment and Immigration Commission and the provincial Departments of Labour, the proportion of Atlantic province residents working on oil rigs increased. Preference for residents was supported by provincial government policy, and in the case of Nova Scotia, by clauses in the *Canada-Nova Scotia Offshore Oil and Gas Agreement*. Secondly, firms began to establish in Nova Scotia and Newfoundland, largely in the Halifax-Dartmouth Metropolitan area and in St. John's, in order to provide specialized services to companies involved in exploration. During the early 1980s, about 50 new ocean industry firms per year established in Nova Scotia, for example. Ocean industries, of which the oil and gas sector was most important, became a growth industry in effect. Thirdly, supply bases were established or expanded at a number of communities in Nova Scotia and Newfoundland. In both Newfoundland and Nova Scotia, in the first half of the 1980s, industrial infrastructure was being put in place in preparation for development.

Table 2
Oil and Gas Reserves, East Coast Canada Compared to United Kingdom and Norwegian North Sea Sectors

	Discovered Resources		Potential Resources	
	Gas (billion m^3)	Oil (million m^3)	Gas (billion m^3)	Oil (million m^3)
Offshore Newfoundland	145	160	-	-
Offshore Nova Scotia	123	17	-	-
Total East Coast	268	177	2,423	1,877
Norwegian North Sea	1,500	1,340	4,000 - 5,000	
U.K. North Sea	1,374	1,925	1,450 - 2,125	2,000 - 4,200

Sources: COGLA, 1984; Her Majesty's Stationery Office, 1983; Proctor *et al*, 1984; Royal Ministry of Petroleum and Energy, 1983.

Preparation for development of the Atlantic province's offshore resources took place through a number of institutional/policy initiatives. Nova Scotia signed an Agreement with the federal government on March 2, 1982. Legislation to implement the Agreement was proclaimed in July of 1984 (Bill C-43). Agreement was reached with British Columbia, Alberta and Saskatchewan in March of 1985 on a new gas and oil pricing and fiscal regime (the Western Accord). Previously, in February, 1985, the Government of Canada and the Government of Newfoundland and Labrador signed the Atlantic Accord, bringing to an end the long-standing dispute between these two governments on how offshore resources should be managed and how revenue should be shared. On October 30, 1985, the federal government introduced its Frontier Energy Policy, replacing Petroleum Incentive Payments with tax credits, eliminating the 25 percent Crown back-in provision and making other changes.

A number of other developments occurred during the first half of the 1980s which brought offshore development closer to reality. Mobil completed Environmental Impact Statements for both Venture and Hibernia (Mobil Oil Canada, 1983; 1985). The Sable Island Environmental Assessment Panel (1983) and the Socio-Economic Review Panel (1983) reported to the federal and Nova Scotia governments through the Canada-Nova Scotia Offshore Oil and Gas Board on the environmental and socio-economic effects of the Venture gas project. Along with its partners, Petro-Canada, Texaco, Nova Scotia Resources Ltd. and Canterra, Mobil filed an export application for Venture gas with the National Energy Board (Venture Gas Project, 1985). Sable Gas Systems gave notice to the NEB of its intent to file a facilities application for constructing the offshore and onshore transmission lines for Venture Gas (Sable Gas Systems, 1985). The New England States Pipeline Supply Corporation filed an application with the Economic Regulatory Agency of the United States Department of Energy to import gas from the Venture project. In Newfoundland, on July 31, 1985, Mobil announced its intention to use a concrete gravity-based platform for oil production from Hibernia, thus ending a long-standing debate over the type of production system (fixed or floating) which centered very much on the industrial benefits that would accrue to Newfoundland as well as on operational requirements created by the environment.

The first half of the 1980s thus witnessed a number of important developments with respect to the offshore. Exploration resulted in a number of significant discoveries. The offshore supply industry expanded. Agreement on managing and sharing the revenue from offshore resources were reached with Nova Scotia and Newfoundland and development plans for two offshore fields (Venture and Hibernia) were formulated. Neither the Venture nor the Hibernia projects are static. Both are moving to the development stage, albeit according to a timetable which has slipped considerably since these two fields were first discovered six years ago. The question at hand is what impacts these projects, and possibly other offshore projects, will have on the Atlantic provinces.

Rates of Return

From an operator's perspective, the essential question is whether a project will provide a sufficient rate of return to justify investment. What is important in making the decision to invest is the alternative uses for the capital which, in the case of multinational oil companies, is competing investments elsewhere in Canada and in the world. For governments, an important question is whether the social benefits exceed the social costs. Also of concern to governments is the amount of revenue these projects generate.

In an economic analysis of the Venture and Hibernia projects prepared for the Economic Council of Canada in 1984 (Eglington and Uffelman, 1984) for the social case (that is, no taxes or royalties), the nominal rate of return for Venture was determined to be 24.5 percent and the real rate of return 16.7 percent. The respective rates for Hibernia were 39.5 and 31.1 percent, confirming the generally held view that Hibernia is more profitable than Venture. Energy projects – because of the high risks involved as a result of fluctuating prices, cost overruns, less than anticipated production and so on[2] – are generally expected to yield a real rate of return of 18 percent or higher. At this level, Venture would appear to be a marginal development, whereas the rate of return for Hibernia is apparently well above the required rate. The rates of return quoted above are based on oil and gas prices considerably higher than those now prevailing, however.

Economic Impacts

Two benefit-cost analyses have been conducted for the Venture project; one for the Environmental Impact Statement, by DPA Consulting Ltd. (1983), and another for the Venture partners' application to the National Energy Board (Path Economics and Marvin Shaffer and Assoc., 1985). The decision rule in benefit-cost analysis is to proceed with a project if the discounted net benefits are positive, and not to proceed if the net benefits are negative. If net benefits are positive, welfare gains exceed welfare losses and, consequently, society as a whole is better off.

Benefit-cost analysis does not take into consideration who gains and who loses.

In the DPA analysis, net benefits were determined to be $1.76 billion (1982 dollars) at a 10 percent social discount rate. The benefit-cost ratio was 1.47/1. In the analysis conducted for the Venture partners' application to the NEB, net benefits were determined to be $1.9 to $3.5 billion (1984 dollars) at a real discount rate of 8 percent. The benefit-cost ratio was 1.77/1 to 2.38/1. One suspects that net benefits and the benefit-cost ratio for the Hibernia project may be even higher than for Venture as a consequence of the project's higher rate of return and the existence of higher unemployment levels in Newfoundland than in Nova Scotia.

A logical question to ask is what will the Venture development mean to the Nova Scotia economy, and the Hibernia project to the Newfoundland economy. First of all, sales of gas from Venture and oil from Hibernia will increase each province's Gross Provincial Product. The appropriate measure is the value added which, in the case of a natural resource, such as gas or oil, tends to be a high proportion of the value of sales, as value is being added all along the production process to a commodity which, when still beneath the ocean, is essentially worthless. We would not be too far off the mark, therefore, if we compared the value of gas or oil output to the Gross Provincial Product. At peak production, output from Venture, valued in 1984 dollars, would likely represent 8.5 percent of the Gross Provincial Product of Nova Scotia in 1984, and output from Hibernia would likely represent about 43 percent of Newfoundland's Gross Provincial Product, again measured in 1984 dollars.

Development and production of Venture and Hibernia will create employment and increase the production of firms supplying goods and services to the project. To the extent that unemployment and idle capacity exist within the Nova Scotia and Newfoundland economies, there will be net benefits which will be reflected through the shadow price which is attached to these purchases. The higher the level of idle capacity, the lower will be the shadow price attributed to labour and materials, and hence the greater the net benefits from the projects. A point that should be stressed is that employment creation and industrial benefits *per se* are not valid objectives for undertaking a project. What is important, from society's perspective, is the value of a project's output and the opportunity cost of the factors of production used in producing the output. Nevertheless, both projects will have significant impacts on employment and industrial development.

The most recent cost estimate for developing Venture is $2.446 billion (Venture Gas Project, 1985) and for developing Hibernia $4.770 billion (Mobil Oil Canada, 1985). From a regional development perspective, a relevant issue is how much of the construction, fabrication and drilling expenditures will generate economic activity within the Atlantic provinces. For Venture, it has been estimated that 23 percent of development expenditures will accrue to Nova Scotia (Mobil Oil Canada, 1983: Vol. IV, p. 211) and for Hibernia that between 19 and 23 percent of development expenditures will remain within Newfoundland (Mobil Oil Canada, 1985: Vol. IV, p. 190). In the case of Venture, the other Atlantic provinces account for 7.5 percent of direct expenditures.

The bulk of the Canadian industrial benefits from construction activity accrues not to the Atlantic provinces, but to the rest of Canada, (about 43.5 percent of expenditures in the case of Venture and 26 percent of expenditures in the case of Hibernia) with a significant amount of expenditures (26 percent in the case of Venture, and from 48 to 54 percent in the case of Hibernia) represented by imports.

In the production phase, a significantly larger proportion of expenditures accrue as benefits to the Atlantic provinces. For Venture, it has been estimated that 53 percent of expenditures will be made in Nova Scotia and an additional three percent in the rest of the Atlantic provinces, with 18 percent of expenditures made directly in the rest of Canada and the remaining 26 percent in imports (Mobil Oil Canada, 1983: Vol. IV, p. 211). The distribution of direct expenditures during the production phase of Hibernia would be expected to be similar, with direct expenditures in Newfoundland accounting for over half of the total. Annual construction and operating expenditures are given in Table 3. In the peak construction year for the two projects (1989) about $300 million would be spent in the Atlantic provinces. This represents about 20 percent of the value of output of the Atlantic provinces' construction industry.

A significantly higher proportion of construction expenditures result in demand for labour within Nova Scotia and Newfoundland. This occurs because of the construction and installation operations taking place within the relevant province, whereas much of the fabrication activity is expected to occur outside of the Atlantic provinces. Employment estimates for the construction and production phases of the Venture and Hibernia projects are given in Table 4. Local employment refers to the demand for labour within the relevant province, not the person years that will be filled by persons from the province. For

Venture, about 75 to 80 percent of the demand for labour within Nova Scotia during the construction phase is expected to be filled by Nova Scotia labour (Mobil Oil Canada, 1983: Vol. IV, p. 152). About 60 to 90 percent of the local demand for labour during the construction phase of Hibernia is expected to be filled by Newfoundland labour (Mobil Oil Canada, 1985: Vol. IV, p. 214).

Table 3
Annual Construction and Operating Costs, Venture and Hibernia Projects (million 1984$)

	Venture		Hibernia		
	Construction	Operating	Construction	Operating[1]	Total
1985	14	-	-	-	14
1986	29	-	80	-	109
1987	297	-	305	-	602
1988	634	-	640	-	1,274
1989	581	-	770	-	1,351
1990	341	26	660	-	1,027
1991	188	73	405	-	666
1992	106	101	310	465	982
1993	-	91	245	465	801
1994	-	95	215	465	775
1995	-	91	335	465	891
1996	148	97	205	465	915
1997	81	92	215	465	853
1998	-	98	210	465	773
1999	-	104	175	465	744
2000	-	98	-	465	563
2001	-	100	-	465	565
2002	-	98	-	465	563
2003	-	98	-	465	563
2004	-	99	-	465	564
2005	-	97	-	465	562
2006	-	96	-	465	561
2007	-	94	-	-	94
2008	-	94	-	-	94
2009	9	97	-	-	106
2010	-	9	-	-	9

1. Data for peak production years, 1995-1998. Operating costs for other years will be overstated.

Sources: Mobil Oil Canada, (1985); Venture Gas Project, (1985).

Table 4
Employment, Venture and Hibernia, Construction and Production Phases (person-years)

	CONSTRUCTION				PRODUCTION				Construction and Production	
	Venture		Hibernia		Venture		Hibernia			
	Local*	Total*	Local	Total	Local	Total	Local	Total	Local	Total
1986	234	234	175	415	-	-	-	-	409	649
1987	1,677	2,396	325	1,910	-	-	-	-	2,002	4,306
1988	3,581	5,115	1,255	4,835	-	-	-	-	4,836	9,950
1989	3,281	4,687	2,085	5,195	-	-	-	-	5,366	9,882
1990	1,926	2,751	2,145	3,585	580	560	-	-	4,631	6,896
1991	1,062	1,517	785	2,155	580	560	-	-	2,407	4,232
1992	599	855	475	1,700	560	560	1,150	1,150	2,784	4,265
1993	-	-	195	1,025	560	560	1,150	1,150	1,905	2,735
1994	-	-	365	665	560	560	1,150	1,150	2,075	2,375
1995	-	-	685	835	560	560	1,150	1,150	2,395	2,545
1996	1,194	1,194	445	445	560	560	1,150	1,150	3,349	3,349
1997	653	653	445	445	560	560	1,150	1,150	2,808	2,808
1998	-	-	445	445	560	560	1,150	1,150	2,155	2,155
1999	-	-	445	445	560	560	1,150	1,150	2,155	2,155
2000	-	-	-	-	560	560	1,150	1,150	1,710	1,710

Table 4 (Cont'd)

	CONSTRUCTION				PRODUCTION				Construction and Production	
	Venture		Hibernia		Venture		Hibernia			
	Local*	Total*	Local	Total	Local	Total	Local	Total	Local	Total
2001	-	-	-	-	560	560	1,150	1,150	1,710	1,710
2002	-	-	-	-	560	560	1,150	1,150	1,710	1,710
2003	-	-	-	-	560	560	1,150	1,150	1,710	1,710
2004	-	-	-	-	560	560	1,150	1,150	1,710	1,710
2005	-	-	-	-	560	560	1,150	1,150	1,710	1,710
2006	-	-	-	-	560	560	1,150	1,150	1,710	1,710
2007	-	-	-	-	560	560	-	-	560	560
2008	-	-	-	-	560	560	-	-	560	560
2009	73	73	-	-	560	560	-	-	633	633
2010	-	-	-	-	560	560	-	-	560	560

* Estimated from information in Mobil Oil Canada (1983: Vol. IV, p.152), according to construction cost timetable information in Table 3, above.

Sources: [17], [18]. Mobil Oil Canada, 1983; 1985.

During the production phase, in the case of Venture, the Nova Scotia supply increases to over 95 percent. The same would probably hold true for Newfoundland labour supply during the production phase of Hibernia.

During the peak year of construction, Venture and Hibernia will generate over 5,000 direct person-years of employment in Nova Scotia and Newfoundland. To put this in perspective, in 1984, employment in the Atlantic provinces totalled 809,000 and unemployment 147,000. Even if every direct job led to an unemployed person becoming employed, which is highly unlikely, and if the labour force participation rate did not change, the increased demand for labour from the construction of Venture and Hibernia, not allowing for any indirect or induced effects, would only decrease the 1984 unemployment rate from 15.3 percent to 14.8 percent. During the production phase, under the same assumptions, the unemployment rate would be reduced by 0.1 percentage points. Needless to say, indirect and induced effects will increase the employment impacts, but under reasonable assumptions with respect to labour force participation and migration, the unemployment rate cannot be expected to decrease very much as a result of the construction of and production from Venture and Hibernia.

The employment and industrial impacts of Venture and Hibernia are outlined in Table 5. Revenue and cost information for both Venture and Hibernia is summarized in Table 6. For Venture, the cost of constructing the transmission line to the U.S. border has been included, as has revenue for both gas exports and gas sold to the Maritime provinces.

Government Revenues

Government revenues, in the case of energy projects, can generally be regarded as rents, recognizing that there are a number of different rent concepts from pure Ricardian rents to Marshallian quasi-rents (see Robert Mansell's discussion in Chapter 8). Essentially, rents can be regarded as what is left over after all other factors of production have received their competitive rate of return. If, as we pointed out previously, the rate of return on Venture is marginal, then there will be very little rent. In simplistic terms, and recalling Ricardo, rents are earned on inframarginal, not marginal, units. Nevertheless, it may still be worth proceeding with an offshore development even if there are no rents. The Macdonald Commission (1985, Vol. 3: 491), in reference to recovering oil from non-conventional sources, noted:

"Economic rents cannot be extracted if there are none to be had. Yet even projects that yield no economic rents can be of immense benefit to the economy if, while yielding a reasonable return to the operators, they provide employment and produce oil that is competitive with world prices, thus reducing our reliance on imports."

Table 5
Employment and Industrial Impacts of Venture and Hibernia Projects

Construction Period	1987-1992 Venture	1987-1992 Hibernia
Construction Costs (million 1984$)		
Platforms	604	2,010
Subsea Pipelines	526	120
Development Drilling	822	1,145
Tankers	–	440
Onshore Facilities	323	–
Other	171	1,055
TOTAL	2,446	4,770
Average Annual Operating Costs (million 1984$)	96	465
Construction Employment (person years)	19,733	24,100
Local Construction Employment (person years)	14,167	10,270
Production Employment (Annual)	560	1,150
Local Production Employment	560	1,150
Industrial Benefits (Construction)		
- Local (million 1984$)	612	180-1,078
- Canada (million 1984$)	1,826[1]	1,740-2,490

1. Pro rated on basis of information in Mobil Oil Canada, 1983: Vol. IV.

Sources: Mobil Oil Canada (1983: 1985) Venture Gas Project (1985).

Table 6
Revenue and Costs, Venture and Hibernia
(billion 1984$)

	Venture	Hibernia
Revenue	14.13	22.08
Construction Costs	2.45	4.77
Transmission	0.74	-
Operating Costs	2.78*	6.98
Revenue Less Costs	8.16	10.33

* 30 years

Sources: Mobil Oil Canada (1983; 1985); Venture Gas Project (1985).

When discoveries in the North Sea were first developed in the late 1960s, the price of oil was about $3.00 per barrel and most of these energy projects were marginal; that is, returns barely covered costs. With OPEC induced price increases in 1973, however, leading to $12 per barrel, oil returns increased immensely, as they did again in 1979 when OPEC shoved the price to $28 per barrel and even higher. North Sea energy projects were no longer marginal and the issue of rents and how they should be distributed became an important issue of public debate, not only in North Sea countries, but also here in Canada. The National Energy Program in Canada can be regarded as much as a program to distribute rents from energy projects as a program to promote energy development.

Rents may accrue to the federal government, the provincial government, producers or even consumers. Suppose that offshore energy projects, such as Venture or Hibernia, generate returns over and above their marginal cost of production. A completely efficient system would bleed off these returns as rents and redistribute them to society[3]. How they are returned to society becomes more a matter of distribution or equity than of efficiency. In Canada an additional complicating issue facing governments is how these rents are shared between the federal and provincial levels. This issue of sharing becomes even further complicated when equalization payments are considered.

Equalization payments are made by the federal government to provincial governments which have less than average fiscal capacity. All of the Atlantic provinces are recipients of equalization payments which in 1983 amounted to $1.8 billion for the Atlantic provinces with Nova Scotia receiving $608 million and Newfoundland $517 million. Resource taxes enter the equalization formula, used for determining how much a province receives, in such a way that any increase in revenue from energy production is completely offset by a reduction in equalization payments. A 1982 change in the equalization formula produced this result. In short, a poor province like Nova Scotia or Newfoundland would be no better off, in terms of government revenues, after production of offshore oil and gas than it was before the resource was developed. To quote Courchene (1983):

> ". . . if a province that is not one of the five [representative] provinces (e.g., any Atlantic province) undergoes an increase in its base (B_i), the loss in equalization will be such that its overall revenues (own revenues plus equalization) will remain unchanged. This assumes that its tax rate equals the national average tax rate. If it taxes at a lower rate, its *overall revenues will fall* when its base increases" (p. 471).

And further:

> "It is in connection with major developments such as offshore oil that the equalization program can incorporate very serious disincentive effects unless the tax base reflects the potential rents that can be extracted from these ventures . . . . The basic point remains that with an equalization program that, for the Atlantic region, embodies a confiscatory tax at the best of times with respect to revenues associated with any increase in the tax base, care must be exercised in ensuring that the definition of the tax base is not such as to generate an 'equalization tax' in excess of 100 per cent of any revenue increase." (p. 472).

Needless to say, the effect of resource taxes on equalization payments is of some concern to the Atlantic Provinces. However, it needs to be pointed out that both the *Canada-Nova Scotia*

Offshore Oil and Gas act and *The Atlantic Accord* recognize and offer protection to Nova Scotia and Newfoundland from a reduction in equalization payments. To quote *The Atlantic Accord*:

> "The two governments recognize that there should not be a dollar for dollar loss of equalization payments as a result of offshore revenues flowing to the Province. To achieve this, the Government of Canada shall establish equalization offset payments."

In short, Newfoundland is protected for 12 years from any equalization losses resulting from a change in the floor provisions of the *Fiscal Arrangements Act* and for five years at 90 percent if there is no change in the floor provisions. After five years, the offset provisions decrease 10 percent per year. For Nova Scotia, offset provisions total 90 percent for the first year after offshore production commences and then decrease 10 percent per year, not taking account of the floor provisions in the Fiscal Arrangements Act. The floor provisions provide protection to equalization payment reductions which varies with a province's per capita fiscal capacity – the lower the capacity, the greater the protection. The floor provisions operate in a similar manner to the offset provisions except that they apply to total equalization payments, not just the resource revenue component.

The revenue and equalization offset provisions of the Venture Gas Project have been analyzed by Copplestone (1985). For Venture only, he estimates that the federal and provincial governments would collect $201 million per year (1983$) in taxes, split roughly 75 percent provincial, 25 percent federal. The provincial share amounts to about $175 per capita. If there are no equalization offset provisions and no floor provisions, then Nova Scotia's equalization entitlement would be reduced by the full $175 per capita (about $150 million) per year. However, both the offset provisions and, in their absence, the floor provisions provide protection to the reduction in equalization payments. In total, the offset provisions provide additional revenue to Nova Scotia, over the ten years in which the provisions are operative, of about $685 million. Without the offset provisions, the floor provisions would provide protection of about $195 million. Obviously the offset provisions are significant. Questions have been raised, however, about whether offset provisions adhere to the underlying philosophy of equalization (Copplestone, 1985).

From a regional development perspective, revenue from offshore resources can represent a major impact of development, particularly if additional oil and gas reserves are found off the East Coast. To quote Peter Odell (1979):

> "There are good arguments to justify the idea that the further economic and social development of the oil-producing areas should have the first claim on these resources. Indeed, there are precedents in other parts of the world for such a priority being accepted. In Federal countries, it is usually the state [province], rather than the federal government which lays claim to the lion's share of the rent accruing. This is the case, for example, in Alberta where Canada's oil and gas production is concentrated, and it is a procedure that has set Alberta well apart from the rest of the Federation in terms of state income, public expenditure possibilities and lower rates of general taxation – to the clear and obvious advantage of Alberta in regional development potential."

Tom MacKay (1981) also makes this point:

> "Another important point is that the direct effect of the North Sea developments (in terms of employment creation, industrial output and so on) are much smaller than the indirect effects (in the form of government revenue, savings on the balance of payments and company profits). This should be an obvious fact but despite our earlier attempts to convince people of that, it is often forgotten."
>
> "North Sea oil is now selling at an average of about $38 per barrel. The average production cost is $12 per barrel and the remaining $26 represents government revenue from royalties and taxation and also company profits. Furthermore, of the $12 cost, only about $4 represents income and employment generated in Scotland, because much of the equipment and materials are imported, either from the rest of the U.K. or abroad. Very simply, therefore, the direct effects (equivalent to $4 per barrel) are about one-seventh of the indirect effects (the $26). This would be true for most regional economies with high import leakages."

Stemming from the recommendations of the Rowell-Sirois Royal Commission (1939), equalization payments were designed to enable poor provinces to provide the same level of public services as rich provinces which, by virtue of higher average incomes, are able to raise more tax revenue through an equal tax effort than are low-income provinces. If equalization payments were introduced initially for purposes of regional equity, and have been enshrined in the Constitution with this in mind, should a recently introduced change, designed to prevent an increase in federal payments resulting from the unforeseen increase in oil and gas revenues in Alberta (Royal Commission, 1985: Vol. 3, 186-189) prevent a poor province from receiving more revenue? It would seem that equalization offset payments are more in keeping with the philosophy of equalization than are arrangements which prevent poor provinces from taking advantage of an increase in revenue from one source.

Conclusion

The Venture and Hibernia offshore development projects will significantly increase the level of output of Nova Scotia and Newfoundland, but will have little effect on the Atlantic province's unemployment rate. New Brunswick and Prince Edward Island are expected to benefit only marginally from industrial purchases associated with the two projects. The major beneficiaries from industrial purchases will be the other provinces of Canada and other countries. These facts notwithstanding, in terms of their social benefits and costs, the two projects appear to be desirable. A major issue with respect to these two projects, and more so in the case of Venture than Hibernia, is whether the expected rates of return on investment are sufficiently high for the projects to proceed.

Should Venture and Hibernia proceed more or less according to the schedule outlined above, and with some returns over and above those necessary for the operators to undertake the projects, it is expected that revenue sharing and, in particular, equalization offset could become an issue to the federal and provincial governments. At the heart of this issue is the philosophy of equalization payments. A case has been made in this paper for equalization offset payments being in keeping with the principle of equalization.

Footnotes

1. Five wells have been drilled off Prince Edward Island and one in the Bay of Fundy between Nova Scotia and New Brunswick, but no significant discoveries have been made.

2. See Castle (1985) for a review of North Sea experience with respect to cost overruns, construction delays, and change in prices and their effect on the expected rate of return.

3. One alternative in redistributing these rents is to leave them with producers, in which case the rents would not be "bled off" through taxation or other measures (e.g. royalty payments).

References

Canada, Bill C-43 (1984), *An Act Respecting the Canada-Nova Scotia Agreement on Offshore Oil and Gas Resource Management and Revenue Sharing and to Make Related and Consequential Amendments.*

_______________ 1985a. *Canada's Energy Frontiers: A Framework for Investment and Jobs*. Ottawa: Minister of Supply and Services Canada.

_______________ 1985b. *The Western Accord*, an Agreement between the Governments of Canada, Alberta, Saskatchewan and British Columbia on Oil and Gas Pricing and Taxation.

Canada and Newfoundland and Labrador, 1985. *The Atlantic Accord*. Memorandum of Agreement Between the Government of Canada and the Government of Newfoundland and Labrador on Offshore Oil and Gas Resource Management and Revenue Sharing.

Canada Oil and Gas Lands Administration, 1984. *Annual Report, 1984*.

Castle, Grover R., 1985. "Assessment of North Sea field performance," *Petroleum Economist*, October: 358-359.

Copplestone, Glen H., 1985. "Equalization Implications of the Canada-Nova Scotia Offshore Oil and Gas Agreement", paper presented to the Canadian Economics Association, Montreal, May.

Courchene, T.J., 1983. "Canada's New Equalization Program: Description and Evaluation," *Canadian Public Policy*, 9, 4: 458-475.

DeWolf, A. Gordon, 1983. "Some Observations on Nova Scotia Developments Relative to Canada's East Coast", *The Journal of Canadian Petroleum*, March-April: 75-80.

_____________, Thomas Pinfold and G.A. MacKay, 1982. "The Potential Macro-Economic Impacts of Offshore Oil and Gas on the Atlantic Provinces of Canada". International

Conference on Oil and the Environment (ICOE '82), Conference Proceedings, part B: 11-38.

DPA Consulting Ltd., 1983. "Venture Gas Field Development: Benefit/Cost Analysis," prepared for Mobil Oil Canada, Ltd.

Eglington, Peter and Maris Uffelman, 1984. *An Economic Analysis of the Venture Development Project and Hibernia*, Discussion Paper, No. 261. Ottawa: Economic Council of Canada.

Her Majesty's Stationery Office, 1983. *Development of the Oil and Gas Resources of the United Kingdom*, London.

Jenkin, Michael, 1981. *British Industry and the North Sea*, London: The Macmillan Press Ltd.

MacKay, G.A., 1981. "The Regional Impact of North Sea Oil on Scotland", paper presented to the Canadian Regional Science Association, Halifax.

Mobil Oil Canada Ltd., 1985. *Hibernia Development Project: Environmental Impact Statement:*
Vol. I - "Summary";
Vol. II - "Project Description";
Vol. IV - "Socio-Economic Assessment".

______________, 1983. *Venture Development Project: Environmental Impact Statement:*
Vol. I - "Summary";
Vol. II - "Project Description";
Vol. IV - "Socio-Economic Assessment".

Odell, P.R., 1979. *The Oil Industry and Regional Development*. Economisch Geografisch Institut, Erasmas Univeriteit, Rotterdam, Nederland.

Path Economics Ltd. and Marvin Shaffer and Associates Ltd., *Public Interest: Benefit-Cost Analysis of the Venture Gas Project*, prepared for the Venture Task Force, May, 1985.

Proctor, R.M., C.G. Taylor and J.A. Wade, 1984. *Oil and Natural Gas Resources of Canada*. Geological Survey of Canada, paper 83-31.

Royal Commission on Dominion-Provincial Relations, 1939. *Report*, Book II: *Recommendations* Ottawa: King's Printer.

Royal Commission on the Economic Union and Development Prospects for Canada, 1985. *Report*, 3 vols. Ottawa: Ministry of Supply and Services.'

Royal Ministry of Petroleum and Energy, Norway, 1983. *Fact Sheet: The Norwegian Continental Shelf.*

Sable Gas Systems, 1985. "Notice of Intention to Make Application", Sept. 23.

Sable Island Environmental Assessment Panel, 1983. *Venture Development Project:* Report, Dec.

Socio-Economic Review Panel, 1983. *The Venture Development Project: Report.*

Statistics Canada, *Labour Force Survey*, Catalogue 71-201.

____________, *Provincial Economic Accounts*, Catalogue 13-213.

Venture Gas Project, 1985. *Application to the National Energy Board for an Export Licence*, 8 vols.

Voyer, Roger, 1983. *Offshore Oil: Opportunities for Industrial Development and Job Creation.* Toronto: James Lorimer & Company.

Chapter 10:

Technological Change and Regional Development

Barry Lesser

The Role of Technology: Traditional Views

In *Living Together*, the Economic Council of Canada (1977) identified the adoption of new technology as a factor contributing to the explanation of differences in worker productivity between Canada's various regions.

The Council's hypothesis was that where a regional difference in level of technology does exist, it is due primarily to a lag problem. In other words, "it should not be concluded . . . that regions where technology is less advanced have failed to adopt any technical innovations, but simply that, in general, new methods of production are adopted later in low-productivity regions. . . . In the technology race, each region runs at about the same speed; but there are persisting leaders and laggards" (pp. 87-88).

The Council then proceeded to examine three innovations in order to test this hypothesis: computers, newsprint production, and shopping centres. The hypothesis was confirmed for two of the three cases and the Council concluded that:

> The existence of lags in two out of three cases studied clearly suggests that other lags will exist and that an effort to shorten them could contribute significantly to closing the regional productivity gaps (p. 92).

This theme regarding the regional impact of technological change is maintained in the Council's subsequent work on Newfoundland (Economic Council, 1980):

> The rate at which new technology is adopted is thus an important determinant of increases in efficiency and labour productivity. If producers in Newfoundland are

> slower in adopting new techniques than their counterparts in Ontario, that fact alone would lower efficiency and labour productivity in Newfoundland (p. 72).

Thus technological change, in the view of the Council, influences efficiency through improved quality of inputs or of production methods, allowing "more and/or higher quality goods and services to be produced at the same, or lower, cost." In a regional context, differences in the rate of diffusion may thus influence the relative efficiency of regional factors of production, producing regional productivity differences and, hence, regional income differences.

One question which this "theory" of the regional impact of technological changes raises is why the rate of diffusion of new technology should differ by region. The Council suggests several possible reasons, including, *inter alia*: market size; market growth; quality of resources; age of existing capital stock; access to major markets; and the availability of manufacturers' sales/support services. These are some of the variables identified in the specific industry or product case studies of technological diffusion carried out by the Council.

The question of influences or determinants of diffusion may be considered at a more general, theoretical level, however. Most available work on diffusion supports the contention that diffusion is predominately a function of economic forces; when it becomes profitable to employ a particular technology, it will be adopted (Rosenberg, 1972; Feller, 1966; Griliches, 1957). Where opinion may differ is on the question of when adoption becomes profitable and/or the criteria for defining profitability. First, new technologies may spark changes in old technologies, causing old technologies to remain viable and to persist. Alternatively, the two may not mix well and hence the age of the present technology in use may delay the introduction of the new. Second, new technologies may be plagued by imperfections; a delay in diffusion may be a function of uncertainty about these imperfections. Third, the diffusion of the technology may depend upon the successful learning of new skills by users, i.e., workers. Fourth, the successful use of one technological change may be a function of some other, complementary, change. And, fifth, diffusion may be influenced by political, social and institutional factors, not just economic factors. In other words, observed lags in the rate of adoption of new technology in certain regions must be considered in the light of a region's particular characteristics and institutions. It cannot automatically be assumed that even in economic terms a lag is necessarily inefficient. We will return to these points in a moment.

Like the Economic Council, the recent report of the Macdonald Royal Commission (1985, Volume 3) regards productivity differences as a major factor in explaining regional disparities in Canada, and views lags in technological diffusion by region as one of the principal factors influencing regional productivity differences.

> Wage gaps are created because labour productivity for given types of employment is not equal across regions. If output per worker in poorer regions could be brought up to the level that exists in wealthier ones, one important source of regional differences would be removed. . . . If poorer regions adopt technology more slowly, the federal government might help to accelerate this process (pp. 217-218).

Besides wage gaps, which are seen as a function of productivity differences, the Commission suggests that differences in the employment rate between regions represent the other major area of regional disparity in Canada. Canadians in different regions do not have an equal chance of permanent employment. This is caused partly by lower wage rates and lower productivity in relatively low income regions, and partly by fewer job opportunities than workers. Moreover, as productivity rises, some labour may be displaced, while the falling costs associated with the productivity gains may expand market opportunities and, hence, output and employment. In other words, a rise in productivity could add to employment or could displace employment, depending on which of these offsetting effects dominates.

The Spatial Dimension

The above view of the regional impact of technology is not wrong, but neither is it right; that is to say, it is not adequate. The problem or the inadequacy is, in fact, twofold. First, the underlying theoretical framework is that of a neo-classical model. As such it takes no account of the particular characteristics of the regional economies, except as the regional economies manifest certain types of generic characteristics such as market size. Moreover, it assumes perfectly functioning markets, something which simply does not exist. Second, the major round of technological change now being experienced—centering on microelectronics, computers and communications technology—

promises to have special implications for certain characteristics of regional economies which may be different than past rounds of technological change.

The above discussion of some of the qualifications which should be noted regarding the determinants of the regional diffusion of technology are relevant here, since most of these represent or involve particular characteristics of the regional economies. As such, they are qualifications for which the Council or the Commission model does not allow. Questions of factor productivity or inputs and technical progress, as used by the Council, have no inherent spatial dimension. Regional disparities and regional differences are, however, inherently spatial questions (Richardson, 1974; Goddard, 1980). What we really need to ask about technology in a regional context is how it affects the spatial distribution of economic activity between and within regions. This, in turn, has two dimensions: first, the impact on existing industries in a given region; and, second, the impact on industries/firms which may be interested in locating/relocating in a region. As Goddard (1980) argues,

> Most research into technological change has been conducted either at the macrolevel (i.e., the significance of technological change for national economies or for the international division of labour) or at the microlevel (i.e., the determinants of and consequences of technological change for individual companies). However, the spatial aspects of technological change concern the "mesolevel", the sum total of establishments and enterprises in a particular area. . . . While in the long run new technologies may create new industries and occupations in the nation as a whole, the positive and negative effects of each technological change are unlikely to be evenly distributed throughout the national territory (pp. 90-91).

The particular thrust of the technological change which is presently taking place – involving microelectronics, computers and communications – is leading Canada and many other countries of the world towards the "information age" or "information economy". Already the fastest growing segment of the labour force is the group of so-called information workers. The significance of this information technology for regional development in Canada goes beyond such simple trends, however. Potentially we are dealing with a quantum change in technology for the economy at large, with corresponding implications for the basic structure of economic activity, occupational mix and employment rates. Moreover, we are dealing with a technology which is, itself, fundamentally spatial in character.

The combination of computer and communications technology, both of which, in turn, are being driven by advances in microelectronic technology, is creating a new generation of "footloose" industries and/or occupations, i.e., a set of economic activities which are in a technical sense location independent. This phenomenon may manifest itself at a number of different levels: the liberation of various consumer transactions from personal visits to establishments (e.g., electronic banking, electronic shopping); a separation of certain job activities from a specific work location (e.g. keyboard operators working from home); a separation of management from on-site access to staff; and so forth. In other words, the phenomenon may operate at the level of individuals, firms or parts of firms, and may involve great distances or small distances. It may involve organizational structures and hierarchies within firms; ways of conducting business; production processes and marketing efforts; or inter-firm relations.

In the specific context of regional economies, the question can be rephrased in terms of the centralization versus decentralization tendencies due to new technology. When the question is put in these terms, a number of significant considerations emerge: First, the issue is not simply one of whether the technology is available in a particular region; indeed, unless it is available in more than one region, the technology as the agent of centralization or decentralization cannot be examined. Second, centralization/decentralization may relate to either a firm or parts of a firm. And, third, the major determinants of centralization/decentralization between regions are most likely to be a function of characteristics of the regions rather than the technology itself.

Suppose that we have two regions, A and B, which are connected to one another by, among other things, a link between the telecommunications network in each. Thus firms and individuals in either region have unrestricted access to the telecommunications network of the other. Assume also that the networks in each region are equivalent in their technical abilities, i.e., each can provide (handle) any service which the other can.

In principle, in such a situation, either region may gain from the use of this network and the distribution of gains may favour one region over the other. Enhanced speed and volume of market information flows may aid the marketing efforts of firms located in one region trying to sell in the other; the substitution of electronic communications for travel or local sales offices may enhance the market area which firms in either region can serve by reducing the cost of doing so; networking may permit a relocation of certain work units to areas where skills are more readily available or where wages are lower; for goods-producing firms already operating in both regions, automatic, point-of-sale electronic inventory control systems may allow significant savings in inventory stocks and in warehousing centres; the use of communications systems (voice and/or data) to maintain customer contact may allow firms in either region to erode part of the "natural protection" traditionally afforded local firms in the other region; management may become more centralized, permitting savings in total management personnel and/or more effective utilization of existing management. And so on.

If the two regions in our hypothetical case are initially unequal in terms of economic development, there is some reason to believe that the advantaged region will gain relatively more than the disadvantaged region, thus exacerbating the regional disparity between the two.

What is important to realize in this is that the technology itself, once it is in place, will be neutral with respect to the distribution of benefits between the two regions. Theoretically, either region may gain relative to the other. It is other characteristics of the two regions which will determine the outcome. In other words, the technology is technically neutral, but not economically neutral, in its impact. If one of the two regions is less developed than the other, has a smaller local market as a starting base, is more distant from the primary national market, has a less well-developed industrial base, has lower average income levels, has a less well-developed infrastructure, and so forth, then this region is not likely to benefit proportionately from its investment in the technology of the information economy.

Added to this may be strong attitudinal factors which lead to management practices of housing workers under one roof, or at least in the same area. Senior management itself may need to be in the centre region in order to be close to financial markets or to other firms in the industry, or may perceive this to be the case at least.

Against these factors, i.e., on the other side of the ledger, there may be wage advantages to locating in the periphery region for footloose firms or footloose divisions of firms; there may be attractions of a "simpler" way of life; and, very importantly, the increasing application of microelectronic technology to industrial processes may eliminate all or part of the traditional cost advantages of large firms due to economies of scale, which in turn, given the existing concentration of large firms in centre regions, will be of greater relative benefit to periphery regions. Not only may automation and CAD/CAM techniques reduce or eliminate the cost disadvantage of small scale production, but the technology also lends itself to an increasing level of customization or individualization of products without major cost implications (Lesser and Vagianos, 1985). Consumer preference for such products is already evidenced (Toffler, 1980) and, assuming that the cost disadvantage can be eliminated, the prevalence of mass produced products, which is much of the basis for the economies of scale enjoyed by large firms, may become a thing of the past. Again, the effect would be to strengthen the competitive position of small and medium sized firms which, in turn, favours periphery regions relative to centre regions (Lesser, 1984).

Technology and Development Prospects for Atlantic Canada

Using the Atlantic provinces as an illustration of a less-advantaged region in Canada, consider the following characteristics of its economy relative to that of the country as a whole:

1. The Atlantic region has only 9 percent of the Canadian population, a small local base on which to build a market, even if it were not divided up four ways (Table 1).
2. The Atlantic region has a higher than national average rural population, which has also been growing faster than the Atlantic urban population, a significant fact in view of the urban bias of technology, in general, and information technology, in particular (Table 1).
3. The Atlantic region has a lower level of educational attainment than the country as a whole. This may have major implications for the ability of the labour force in Atlantic Canada to respond to the labour market requirements of information activities (Table 2).
4. The Atlantic region has higher rates of unemployment, lower participation rates and a lower employment ratio than Canada as a whole. This not only further weakens the already small local market but also reinforces the conclusion regarding available labour force skills (Table 3).

Table 1
Population Figures for the Atlantic Provinces

	1984 Population (000's)	1981 Urban Population (000's)	1981 Rural Population (000's)
Canada	25127.9	18435.9	5907.3
Newfoundland	579.5	332.9	234.8
New Brunswick	713.3	353.2	343.2
Nova Scotia	869.9	466.8	380.6
Prince Edward Is.	125.3	44.5	78.0

Sources: Statistics Canada, cat. no. 91-210, 1984.
Statistics Canada, cat. no. 92-202, 1981 Census of Canada.

5. Within occupational groupings which may be considered as predominately information worker jobs (clerical, managerial/administrative, sales and service), the Atlantic region has a significant number of workers, but less than the national proportion; i.e., the region already is lagging. Moreover, clerical and sales occupations are better represented in Atlantic Canada while managerial, administrative jobs are less well represented, indicating a negative skewness to the income distribution and reinforcing the conclusion of centralization tendencies of management functions (Table 4).
6. Employment by industry confirms the conclusions drawn from the occupational breakdown. Moreover, it indicates the lower level of industrialization in Atlantic Canada and the greater importance of public sector employment. Very significantly, two categories particularly amenable to the application of information technology, "finance, insurance and real estate" and "commercial services" are significantly less well represented within the service sector of the Atlantic economy (Table 5).

Table 2
Population 15 Years and Over by Sex and Level of Schooling Canada and Atlantic Provinces 1981

		Population	Less than Grade 9	Grades 9-10	Grades 11-13	Post-Secondary Non-University	University	
							with degree	without
CANADA	T	18,609,285	3,851,285	3,301,810	4,820,650	3,666,330	1,490,180	1,479,020
	M	9,151,595	1,900,490	1,624,315	2,202,185	1,762,090	908,150	754,370
	F	9,457,690	1,950,795	1,677,500	2,618,465	1,904,245	582,030	724,655
NFLD.	T	396,485	122,230	96,565	65,165	64,710	18,460	29,345
	M	198,290	65,180	44,300	30,680	32,430	11,375	14,330
	F	198,190	57,055	52,265	34,490	32,280	7,085	15,010
P.E.I.	T	90,825	21,860	21,785	16,200	16,475	5,510	8,995
	M	44,740	13,395	10,150	7,105	7,195	3,275	3,615
	F	46,080	8,465	11,635	9,100	9,280	2,230	5,385
N.S.	T	641,490	134,235	152,885	134,055	121,625	47,255	51,435
	M	314,525	75,395	72,915	59,610	55,250	27,230	24,120
	F	326,965	58,840	79,975	74,450	66,370	20,020	27,315
N.B.	T	515,950	147,650	95,800	119,745	83,990	31,120	37,645
	M	254,015	79,845	45,070	53,420	39,925	18,145	17,600
	F	261,935	67,805	50,725	66,330	44,065	12,970	20,040

Source: Statistics Canada, 1981 Census of Canada

Table 3
Labour Force Statistics
Canada and Atlantic Provinces

		Population 15 years and over	Labour Force (000's)			Not in Labour Force	Participation Rate (percentage)	Unemployment Rate (percentage)	Employment/ Population Ratio
			Total	Employment	Unemployment				
Canada	1980	18,053	11,573	10,708	865	6,480	64.1	7.5	59.3
	1981	18,375	11,904	11,006	898	6,471	64.8	7.5	59.9
	1982	18,664	11,958	10,644	1,314	6,706	64.1	11.0	57.0
	1983	18,917	12,183	10,734	1,448	6,735	64.4	11.9	56.7
	1984	19,148	12,399	11,000	1,399	6,749	64.8	11.3	57.4
Nfld.	1980	389	205	178	27	184	52.7	13.3	45.7
	1981	395	208	179	29	187	52.6	13.9	45.3
	1982	401	209	174	35	192	52.1	16.8	43.3
	1983	411	214	174	40	197	52.1	18.8	42.3
	1984	418	221	176	45	197	52.9	20.5	42.1
P.E.I.	1980	89	53	47	6	36	59.9	10.6	52.9
	1981	90	53	47	6	37	58.7	11.2	52.2
	1982	90	52	45	7	38	57.8	12.9	50.3
	1983	91	55	48	7	36	60.2	12.2	52.8
	1984	93	56	49	7	37	60.2	12.8	52.5
N.S.	1980	619	356	321	35	264	57.4	9.7	51.9
	1981	626	359	322	36	267	57.3	10.2	51.4
	1982	633	361	313	47	273	57.0	13.2	49.5
	1983	642	369	320	49	273	57.4	13.2	49.8
	1984	653	387	337	51	266	59.3	13.1	51.6
N.B.	1980	504	280	249	31	224	55.6	11.0	49.5
	1981	508	286	253	33	223	56.2	11.5	49.7
	1982	514	282	243	40	231	55.0	14.0	47.2
	1983	522	290	247	43	232	55.5	14.8	47.2
	1984	529	291	248	44	238	55.1	14.9	46.9

Source: Statistics Canada, cat. no. 71-201

Table 4 (Cont'd)

	Total	Percentage Distribution	Male	Percentage Distribution	Female	Percentage Distribution
P.E.I.						
All Occupations	56,555	100.0	33,705	100.0	22,845	100.0
Clerical and Related Occupations	7,330	13.0	1,505	4.5	5,830	25.5
Construction	4,590	8.1	4,500	13.4	95	0.4
Managerial, Administrative and Related Occupations	2,905	5.1	2,235	6.6	675	3.0
Product Fabricating, Assembling and Repairing	2,170	3.8	1,935	5.7	240	1.1
Sales	4,580	8.1	2,415	7.2	2,160	9.5
Service	7,570	13.4	2,785	8.3	4,775	20.9
All other occupations	27,410	48.5	18,330	54.4	9,070	39.7
N.S.						
All Occupations	378,425	100.0	231,480	100.0	146,945	100.0
Clerical and Related Occupations	60,310	15.9	13,015	5.6	47,295	32.2
Construction	28,160	7.4	27,700	12.0	465	0.3
Managerial, Administrative and Related Occupations	20,900	5.5	15,675	6.8	5,240	3.6
Product Fabricating, Assembling and Repairing	22,260	5.9	19,690	8.5	2,565	1.7
Sales	37,540	9.9	21,585	9.3	15,945	10.9
Service	54,165	14.3	28,045	12.1	26,120	17.8
All other occupations	155,090	41.0	105,770	45.7	49,315	33.6

Table 4 (Cont'd)

	Total	Percentage Distribution	Male	Percentage Distribution	Female	Percentage Distribution
P.E.I.						
All Occupations	56,555	100.0	33,705	100.0	22,845	100.0
Clerical and Related Occupations	7,330	13.0	1,505	4.5	5,830	25.5
Construction	4,590	8.1	4,500	13.4	95	0.4
Managerial, Administrative and Related Occupations	2,905	5.1	2,235	6.6	675	3.0
Product Fabricating, Assembling and Repairing	2,170	3.8	1,935	5.7	240	1.1
Sales	4,580	8.1	2,415	7.2	2,160	9.5
Service	7,570	13.4	2,785	8.3	4,775	20.9
All other occupations	27,410	48.5	18,330	54.4	9,070	39.7
N.S.						
All Occupations	378,425	100.0	231,480	100.0	146,945	100.0
Clerical and Related Occupations	60,310	15.9	13,015	5.6	47,295	32.2
Construction	28,160	7.4	27,700	12.0	465	0.3
Managerial, Administrative and Related Occupations	20,900	5.5	15,675	6.8	5,240	3.6
Product Fabricating, Assembling and Repairing	22,260	5.9	19,690	8.5	2,565	1.7
Sales	37,540	9.9	21,585	9.3	15,945	10.9
Service	54,165	14.3	28,045	12.1	26,120	17.8
All other occupations	155,090	41.0	105,770	45.7	49,315	33.6

Table 4 (Cont'd)

	Total	Percentage Distribution	Male	Percentage Distribution	Female	Percentage Distribution
N.B.						
All Occupations	298,010	100.0	182,670	100.0	115,345	100.0
Clerical and Related Occupations	48,100	16.1	10,610	5.8	37,490	32.8
Construction	24,505	8.2	24,190	13.2	310	0.3
Managerial, Administrative and Related Occupations	16,590	5.6	12,890	7.1	3,705	3.2
Product Fabricating, Assembling and Repairing	16,765	5.6	15,080	8.3	1,695	1.5
Sales	27,270	9.2	16,355	9.0	10,910	9.5
Service	40,010	13.4	18,405	10.1	21,610	18.9
All other occupations	124,770	41.9	85,140	46.6	39,625	34.7

Source: Statistics Canada, 1981 Census of Canada, unpublished tables (series no. CTE81B33)

Table 5
Estimates of Employees by Industry (Non-Agriculture) Canada and Atlantic Provinces 1983 (000's)

	Canada	Percentage Distribution	Nfld	Percentage Distribution	PEI	Percentage Distribution	NS	Percentage Distribution	NB	Percentage Distribution
Non-Agricultural Industries – Total	8582.0	100.0	126.3	100.0	29.6	100.0	241.6	100.0	184.9	100.0
Forestry	57.4	0.7	3.0	2.4	0.1	0.3	2.0	0.8	4.0	2.2
Mining	148.4	1.7	3.6	2.9	...	...	5.3	2.2	3.0	1.6
Manufacturing	1738.6	20.3	16.0	12.7	3.1	10.5	36.5	15.1	29.1	15.7
Construction	365.2	4.2	4.8	3.8	1.6	5.4	9.7	4.0	7.3	3.9
Transportation, Communications and Other Utilities	790.0	9.2	15.1	12.0	3.1	10.5	22.8	9.4	21.5	11.6
Trade – Commerce	1490.0	17.4	21.4	16.9	5.3	17.9	43.7	18.1	32.7	17.7
Finance, Insurance and Real Estate	518.8	6.0	4.7	3.7	1.2	4.1	12.1	5.0	8.1	4.4
Community, Business and Personal Services	2823.5	32.9	41.5	32.9	10.6	35.8	82.0	33.9	60.0	32.4
Non-Commercial Services	1440.1	16.8	27.6	21.9	6.5	22.0	52.2	21.6	36.1	19.5
Commercial Services	1383.4	16.1	13.9	11.0	4.1	13.9	29.8	12.3	23.9	12.9
Public Administration and Defence	659.1	7.7	16.2	12.8	4.6	15.5	27.5	11.4	19.2	10.4

Source: Statistics Canada, cat. no. 72-002

7. Only slightly more than 5 percent of computer installations in Canada are located in the Atlantic provinces. Moreover, this percentage has not changed since the mid-1970s. The gap in diffusion is not being narrowed (Table 6).
8. The computer service sector in Atlantic Canada, as of the early 1980s, was relatively miniscule (less than 3 percent) as a proportion of the Canadian total (Table 7). This is indicative not only of a relative lack of development of computer applications in the Atlantic provinces but also of the relative lack of support services (maintenance, programming, and so forth).

This relatively cursory review of certain characteristics of the economy of Atlantic Canada indicates that, based on present characteristics and levels of technological diffusion, the Atlantic provinces are not well positioned to gain, relatively, from the move to an information economy. The potential for gain exists, but without positive action to promote such gains, the initial advantages of the centre region are likely to prevail.

Conclusion

One of the most important points to be recognized is that the implications of technological change for regional development in Canada over the next twenty years will be significantly different than it has been up to now, if the arguments being advanced here with respect to the information economy are accepted. The differences will be a function of the scope and time frame of the technological change and the fundamental structural shifts in the economy which it is likely to produce. A new set of information industries will be formed, new production methods will be introduced, new marketing channels developed and new management practices will be introduced.

In this context the old models of technological change, which see the impact of technology as a gradual process built around existing industry and having its main effect on labour productivity, will not offer adequate prescriptions for coping with the change. The changes will be revolutionary rather than evolutionary (Goddard, 1980). The simple prescription of aiding regional development by diffusing the technology in less developed regions may, as already noted, exacerbate the problem, since the technology itself may be the primary instrument permitting a greater centralization of economic activity.

This conclusion is not to suggest that diffusion is not important. A Luddite-type solution of trying to stem the tide of technological change clearly is not in the long run interests of either the country as a whole or of any individual region. Thus it

Table 6
Computer Installations in Canada

		Alta.	BC	Man.	NB	Nfld.	NS	Ont.	PEI	Que.	Sask.	NWT	Yukon	TOTAL
Dec.	1983	1,664	1,963	578	258	201	398	7,819	32	2,742	962	16	10	16,643
Dec.	1982	1,573	1,806	522	231	183	357	7,226	30	2,566	636	16	8	15,154
Dec.	1981	1,400	1,481	455	190	179	308	6,298	24	2,675	402	15	7	13,434
Dec.	1980	1,084	1,200	396	169	124	276	4,760	12	2,037	320	10	7	10,395
May	1979	774	942	363	146	107	231	3,916	10	1,860	233	9	7	8,598*
May	1978	794	896	333	137	108	199	3,703	11	1,854	204	8	4	8,251*
May	1977	651	731	288	112	95	170	3,123	11	1,456	150	8	4	6,799*
May	1976	555	621	260	97	67	143	2,714	10	1,350	113	5	2	5,937*
May	1975	439	458	200	83	53	126	2,400	7	1,074	94	4	2	4,940*
May	1974	330	331	151	59	44	108	1,894	6	879	92	1	2	3,897*
May	1973	501	499	223	90	56	165	2,809	10	1,271	109	1	2	5,736
May	1972	331	358	179	61	42	120	2,279	5	939	91	1	-	4,406
May	1971	283	290	145	51	31	92	1,814	4	764	73	1	-	3,548
May	1970	213	224	111	40	19	70	1,361	2	603	57	-	-	2,700
May	1969	149	142	85	26	14	43	1,045	1	485	47	-	-	2,037
May	1968	119	107	69	16	9	31	811	-	410	41	-	-	1,613
May	1967	86	93	57	13	6	25	644	-	332	23	-	-	1,279
June	1966	69	70	34	12	6	17	443	-	280	17	-	-	948
June	1965	52	52	30	8	5	14	330	-	204	15	-	-	710
Mar.	1964	-	-	-	-	-	-	-	-	-	-	-	-	502

* Does not include computers that rent for less than $1,000 per month.
Source: Canadian Information Processing Society, "Canadian Computer Censuss", 1964-83.

Table 7
Summary Statistics - Establishments Primarily Engaged in Providing Computer Services
1981/82

Canada and Atlantic Provinces

	Canada		Atlantic Provinces	
	1981	1982	1981	1982
Establishments	1,392	1,752	46	52
Working Proprietors	101	180	3	4
Paid Employees	20,495	22,137	426	468
Salaries and Wages	426,140	534,540	8,355	10,104
Total Operating Revenue $'000	1,102,243	1,347,677	20,605	23,913
Revenues generated outside Canada	58,764	72,580	x	x
Total Operating Expenses $'000	953,493	1,232,315	18,028	22,569

x - Confidential

Source: Statistics Canada, cat. no. 63-222.

becomes very important that the technology be available and accessible in all regions. But diffusion alone will not solve the problem. An important first step in developing an appropriate regional development policy response will be to recognize this fact.

Beyond this, regional development policy makers need to pay greater attention to developing incentive programs and other forms of assistance for service sector firms, moving away, to a greater extent, from the traditional focus on the primary and secondary sectors. They need to focus on encouraging the availability of appropriate support facilities for computer-based processes/enterprises such as, for example, repair services and facilities. Training efforts need to be expanded and to concentrate on the skill requirements of the new technology. Work on finding new applications for the technology amongst existing industries or drawing on existing resources needs to be undertaken. Special attention needs to be paid to identifying footloose industries, firms and divisions of firms, and to seeking to have some of these locate in peripheral regions. An emphasis on small business development in software and data base services would be desirable.

As technological change is introduced in the public sector itself, the effects of this must be carefully monitored. Public sector employment is important to Canada's peripheral regions. Productivity gains in the public sector, however, do not necessarily have the same employment implications which similar gains in the private sector might have.

In the private sector, a gain in productivity translates to a lowering of costs which, in turn, enhances competition, generates more business and, thus, in the longer run, can lead to increased employment. In the public sector, however, productivity gains mean reduced employment, unless accompanied by a growth in the scope or scale of government activities. For municipal or provincial governments, the latter option balances out the employment impact within the region. But for the Federal government, the new jobs from expanded activities may go to other regions, i.e., they need not stay in the region where the jobs are lost. It is not clear how the federal government should respond to this, but it should at least be recognized and monitored as the governments own use of the technology proceeds (Goddard, 1980).

On the telecommunications policy side, the present debate on competition needs a careful consideration from a regional development perspective. On the one hand, competition is perceived generally as producing lower long distance calling charges plus higher local service charges. This would reduce the cost of certain kinds of inter-regional telecommunications services, although it is unlikely to have much impact on major data use which is carried through dedicated data lines or one of the packet switched networks operated by either Telecom Canada or CN/CP. It also, of course, works in both directions, i.e., to the extent that lower long distance charges are an advantage, this advantage may be seized by either centre firms or periphery firms.

On the other hand, competition could mean a loss of profitability for the present regional common carriers on the services which become competitive and, consequently, a reduction in quality and range of service offerings outside the competitive service area. The latter is likely to concentrate on urban centres and the long distance market. Thus the diffusion of new telecommunications services within the region, in particular to non-urban areas, could suffer.

On balance, then, there is some basis to believe that peripheral regions might not benefit relative to central regions from greater telecommunications competition. The intra-regional diffusion of services could suffer, local calling rates would likely rise, and less than average long distance users (small business, for example) would not receive a proportionate advantage from lower long distance charges to compensate them for the higher local calling charges.

In conclusion, the standard view of technological change and regional development is wanting insofar as it fails to take adequate account of the particular characteristics of regional economies, i.e., to consider the spatial dimensions of economic activity explicitly. This problem becomes particularly acute in the context of the microelectronics, computer-communications technology wave we are now experiencing, especially given the major structural shifts this is likely to produce. This current wave of change is not the standard incrementalism of conventional economic theory. In the absence of government initiatives to the contrary, the result most likely will be a growing centralization of economic activity and a consequent widening of existing disparities between central and peripheral regions. With appropriate policy guidance, however, technology has the possibility of opening a new range of opportunities for businesses in less developed regions, including, particularly, the choice of such regions as the location for so-called footloose activities. This is the promise of technology from a regional perspective; to realize this promise is the challenge for the coming decade.

References

Economic Council of Canada, 1977. *Living Together: A Study of Regional Disparities*. Ottawa: Supply and Services.

_____________, 1980. *Newfoundland: From Dependency to Self-Reliance*. Ottawa: Supply and Services.

Feller, I., 1966. "The Draper loom in New England Textiles, 1884-14: A Study of Diffusion of and Innovation". *Journal of Economic History*, 26,3.

George, P., 1982. *The Emergence of Industrial America*. Albany: SUNY Press.

Goddard, J.B., 1980. "Technology Forecasting in a Spatial Context". *Futures*.

Griliches, Z., 1957. "Hybrid Corn: An Exploration in the Economics of Technological Change". *Econometrica*, 25,4.

Lesser, B., 1984. "Regional Requirements of the Information Economy and Canadian Industrial Strategy." In C. Gotlieb (ed.), *The Information Economy: Its Implications for Canada's Industrial Strategy*. Ottawa: The Royal Society of Canada.

_____________, and L. Vagianos, 1985. *Computer Communications and the Mass Market in Canada*. Montreal: Institute for Research on Public Policy.

Richardson, H., 1974. "A Critique of Regional Growth Theory". In O.J. Firestone (ed.), *Regional Economic Development*. Ottawa: Ottawa University Press.

Rosenberg, N., 1972. "Factors Affecting the Diffusion of Technology". *Explorations in Economic History*, 10,1.

Royal Commission on the Economic Union and Development Prospects for Canada, 1985. *Report*, Volume Three. Ottawa: Supply and Services.

Toffler, A., 1980. *The Third Wave*. New York: William Morrow.

Chapter 11:

Investment in University Education, Regional Income Disparities and Regional Development *

Jean-Michel Cousineau
François Vaillancourt

Introduction

The relationship between regional income disparities and level of education in Canada is the focus of this study. We begin by examining data concerning employment income and education in nine Canadian provinces, and then consider the public and private returns to a university education, and the optimal level of investment in education. These issues are relevant for three reasons. First, it is generally acknowledged that the quality of labour in a region has a significant impact upon the type of economic activities that the region is able to attract and, thus, upon the income of its inhabitants. As significant differences in income may be observed between Canada's regions, it is appropriate to consider whether differences in the quality of labour help to explain them.

Second, over the past 30 years, Canada and the provinces have made special efforts in the area of labour force training and education, particularly at the post-secondary level. Thus, since 1952, in order to increase accessibility to university education, the federal government has financed a portion of the operating costs of Canadian universities. For their part, until recently, the provincial governments have devoted an increasing proportion of their resources (if not of their gross domestic product) to the financing of higher education.

Third, and most importantly, budgetary constraints are becoming increasingly common at all levels of government.

---

* The authors are grateful to Josée Carpenter and Irène Henriques for the assistance that they provided, and to the Social Sciences and Humanities Research Council of Canada for its financial support. The translation of the original French version of this paper was done by William J. Coffey.

Therefore, efforts are now being devoted to the rationalisation of expenses, to improved efficiency, and to increased equity in the allocation of budgetary resources. In this context, it is highly pertinent to evaluate, in a rigourous manner, the levels of, and the returns to, investment in the area of university education in Canada and its provinces.

The problem can be conceptualized in the following manner. Assume that expenditures on university education represent expenditures on investments. As such, investments on university education have both costs and benefits for society. The costs of university education include two elements: first, the loss of earnings due to the fact that students do not participate in the labour market on a full-time basis during their studies; and, second, the operating costs of universities.[1] The benefits of university education, on the other hand, include increased revenues generated in the market due to the additional training. The difference between the benefits and the costs yields the rate of return.

Thus, it is important to establish the rate at which the sums invested are recovered since, if the estimated rate of return is higher than that for alternative projects, it is advisable to increase this form of investment. If, on the other hand, the rate of return is lower than that for the alternatives, resources should be transferred out of the university sector to the alternative projects. In this way, it is possible to assess the contribution of the investments in university education to the economic development of a region. Further, at the interregional level, this type of evaluation enables one to analyse, by a comparison of provincial rates of return, the impact of investments in university education on regional income disparities. In this case, however, it is necessary to also take into account the geographic mobility of the labour force since some provincial spending on university education may produce externalities for other provinces.

Clearly, university education may produce non-financial benefits such as an increase in life expectancy, a reduction in crime, an improvement in public health and in citizen participation in government, and so forth. In this sense, non-financial economic factors can render socially viable investments that are not profitable from a strictly financial viewpoint. From the viewpoint of regional economic development and the reduction of regional income disparities, however, the problem can be clearly defined. Thus, this study attempts to determine if the present level of financing of university education by the federal government and the provinces contributes to regional economic development and to the reduction of regional income disparities.

The following section examines the present state of regional disparities in education and in income. Then we examine the conditions which must be fulfilled in order for the financing of university education to lead to the economic development of a region and to the reduction of regional income disparities. Finally, we discuss the implications of our results for national and provincial policies for the financing of university education in Canada.

Regional Disparities in Income and Education

Before proceeding to the analysis of the returns on university education, it is useful to consider the present level of regional disparities in income and in education between the Canadian provinces. Table 1 presents disparities in employment income for men in nine provinces.[2]

Table 1
Regional Income Disparities in Canada:
Employment Income for Males in Nine Provinces, 1980

Provinces	(1) Average Annual Income	(2) Relative to Newfoundland	(3) Relative to Ontario
Alberta	16,435	1.64	1.13
British Columbia	15,292	1.53	1.05
Ontario	14,505	1.45	1.00
Quebec	13,200	1.32	0.91
Saskatchewan	12,853	1.29	0.89
Manitoba	12,153	1.22	0.84
Nova Scotia	10,470	1.05	0.72
New Brunswick	10,230	1.02	0.71
Newfoundland	9,996	1.00	0.69

Source: Statistics Canada, 1981 census microeconomic data. The 1981 census contains information on 1980 incomes.

Income Disparities

The income data presented come from the 1981 census; we have chosen to utilize employment income rather than total income, which includes transfer payments, because the former is more pertinent to the analysis of economic development and to the link between education and income.[3]

Table 1 indicates that between Alberta, having the highest income level, and Newfoundland, having the lowest, the difference is 64 percent (column 2). In relation to Ontario (column 3), the differences are +13 percent and -31 percent for these same two provinces. Taken together, these data indicate that regional income disparities are still significant in Canada. Three types of province may be identified: those with high income ($14,000-$16,000); those with low income (less than $12,000); and those at an intermediate level (values in the range of $12,000 and $13,000). Respectively, these groups include: Alberta, British Columbia and Ontario; Newfoundland, New Brunswick and Nova Scotia; and Quebec, Saskatchewan and Manitoba. It remains to be seen, however, if there is a relationship between these income disparities and those in level of education.

Education Disparities

Table 2 presents the distribution of the labour force by level of education for nine provinces. Here, too, three groups of provinces may be identified: Alberta, British Columbia and Ontario (high level of education); New Brunswick and Newfoundland (low level); and Quebec, Saskatchewan, Manitoba, and Nova Scotia (intermediate level). These groups correspond approximately to those identified for income level. Except in the case of Nova Scotia, a province's average annual labour income varies directly with the educational level of its labour force.

It should be stressed that the high income provinces have a low proportion of workers who ended their schooling at the primary level (less than 20 percent), a strong concentration of workers who completed their secondary education (60 percent), and the highest level of workers who have undertaken post-secondary education (more than 20 percent). Among the low income provinces, Nova Scotia constitutes an exception: 26 percent of its workers have a primary education, 58 percent a secondary education, and 16 percent a post-secondary education. In sum, although we have chosen to limit our analysis to the university level, it appears that the problem of investment in education can also appear at the other educational levels. The data in Table 3, where the average annual income of each province is directly compared with its average level of education, confirm the strong correspondence between income and education.

Table 2
Labour Force by Level of Education and by Province: Males, Nine provinces, 1981 (%)

			Post-secondary		
Provinces	Primary	Secondary	Non University	University	Total
Alberta	14.1	64.3	7.4	14.2	21.6
British Columbia	15.5	63.2	8.8	13.5	22.3
Ontario	18.9	60.4	7.0	13.7	20.7
Quebec	28.2	54.8	5.6	11.4	17.0
Saskatchewan	26.7	56.7	7.1	9.5	16.6
Manitoba	25.1	56.7	7.0	11.2	18.2
Nova Scotia	26.1	57.5	6.1	10.3	16.4
New Brunswick	33.0	52.3	5.6	9.1	14.7
Newfoundland	33.7	52.3	5.3	8.7	14.0

Source: See Table 1.

The Education-Income Linkage: An Intra-Provincial Analysis

In order to better examine the relationship between education and income, it is important to determine if this linkage can be observed at the level of each province; the fact that the provinces with the most highly educated workers are those with the highest average incomes does not in itself prove that an increase in the education of a worker in a given province increases his income. In effect, other regional factors – natural resource endowment, capital stock, level of technology, and so forth – may also influence income level. Table 4 presents average employment income for different educational levels by province. The relationship between income and education may be seen to be a direct one in the case of each province.

Table 3
Employment Income and Average Educational Level: Males, Nine Provinces, 1980-1981

Provinces	Average Annual Employment Income	Average Years of Education *
Alberta	16,435	11.7
British Columbia	15,292	11.7
Ontario	14,505	11.3
Quebec	13,200	10.5
Saskatchewan	12,853	10.5
Manitoba	12,153	10.7
Nova Scotia	10,470	10.5
New Brunswick	10,230	10.1
Newfoundland	9,996	9.8

Source: See Table 1.

* Average years of education have been calculated in the following manner: primary 1-4 = 2.5; primary 5-8 = 6.5; secondary 9-10 = 9.5; secondary 11-13 = 12; university 1-2 = 14.5; university 3-4 = 16.5; university 6 and over = 19.

Relatively minor income differences may be observed between workers with a 5-8 year primary education and those with a 9-10 year secondary education. In certain cases (Ontario, Alberta and British Columbia) the income levels of the former exceed those of the latter. Besides the fact that the group having a 9-10 year secondary education is composed in part of individuals who prematurely abandoned their secondary studies, a partial explanation of this phenomenon is that workers having only a primary education are generally older persons who are in part paid on the basis of their years of experience. It is therefore important, in this context, to take account of experience acquired. The results of ordinary least squares regressions controlling for years of experience are presented in Appendix 1.

Table 4
Average Income by Level of Education: Males, Nine Provinces, 1980

Provinces	Primary		Secondary		Post-secondary		
	1-4	5-8	9-10	11-13	1-2	3-4	5 +
Newfoundland	9,476	10,174	10,519	14,176	15,649	17,661	25,650
Nova Scotia	10,237	11,218	12,070	13,840	16,143	17,364	25,885
New Brunswick	9,701	10,642	11,831	14,186	14,895	18,076	24,984
Quebec	12,782	14,247	14,254	15,387	19,060	24,427	32,590
Ontario	14,495	15,254	14,740	16,499	18,646	24,003	30,554
Manitoba	8,811	12,400	12,773	15,334	16,349	20,176	27,183
Saskatchewan	9,407	14,256	14,594	15,639	17,628	21,671	28,484
Alberta	13,928	16,155	15,946	18,414	18,996	24,800	31,007
British Columbia	15,169	17,095	16,626	18,420	19,428	21,442	29,336

Source: See Table 1.

The results of the method of analysis applied in Appendix 1 are summarized in Table 5. Here, controlling for the effects of experience upon employment, the employment income of workers having completed secondary studies (11-13 years) and university studies (3-4 years) is expressed as a percentage increase over the employment income of workers having completed only primary studies (1-4 years). For example, in Newfoundland and New Brunswick, where a relatively small proportion of secondary and university diplomas are awarded, the incomes of workers in the secondary 11-13 educational level are, respectively, 76 and 69 percent higher than incomes for the primary (1-4 years) level; at the university level the differences are 126 and 149 percent, respectively.

Table 5
Net Effect of Secondary and University Schooling Upon Earnings (Expressed as a % above primary 1-4 level), Males, Nine provinces, 1981

Provinces	(1) Secondary Studies (11-13 years) %	(2) University Studies (3-4 years) %
Newfoundland	76	126
New Brunswick	69	149
Nova Scotia	45	119
Manitoba	52	116
Saskatchewan	30	90
Quebec	31	105
Ontario	25	91
British Columbia	15	29
Alberta	21	67

Source: Table A1 and calculations by the authors.

On the other hand, in provinces in which the proportion of workers with secondary and university diplomas is higher and in which the proportion of workers having completed only primary

(1-4 years) studies is lower, the income differences are much lower. For Ontario, British Columbia and Alberta these differences vary between 15 and 25 percent for the secondary level, and between 29 and 91 percent for the university level. The income differential is thus both positive and significant. This leads us to conclude that increased educational levels clearly produce higher incomes, no matter which province is examined. This observation does not indicate, however, that investment in education leads to regional economic development or to a reduction in regional income disparities. For this to occur, a certain number of conditions must be satisfied. In particular, since there are costs associated with university education – for example, the loss of a direct productive contribution during the period of studies, on the one hand, and the total amount of government expenditures in this area, on the other hand – it is necessary that the observed benefits be compared to the costs in order to evaluate them. The following section describes these conditions in a more detailed manner.

The Conditions Necessary for Success

In order that investment in education, and investment in university education in particular, contribute to the reduction of regional income disparities the following conditions must be satisfied:

1. The mean levels of education (S) must be different from one region to another; thus in the two-region case (regions i and j) $S_i < S_j$.
2. The mean employment income (Y) in these regions must be similarly unequal and in the same relationship as education; thus $Y_i < Y_j$.
3. The employment income in a region must be a positive function of education levels in that region.
4. The rate of return (see Appendix II) on human capital investments in region i must be at least as high as the rate of return of alternative projects (10 percent); this is the basic condition for regional economic development.
5. The rate of return on human capital in region i must be greater than the rate of return on that capital obtained in region j.
6. The level of net migration of university graduates must be positive or zero for the regions with lower income. Conditions 5 and 6, taken together are necessary for the reduction of regional income disparities.

While the first three conditions have been verified in the previous sections of the paper, the other three remain to be verified. The critical variable introduced in the fourth condition is that of rate of return on university education. In order to evaluate this rate of return, it is necessary to compare the income profile of university graduates (3-4 years) with that of the secondary (11-13 years) group.

As indicated in Figure 1, it is expected that at a certain age, E_s, the typical high school graduate will enter the labour market and will receive earnings which first increase then decrease with age until retirement (curve ABC). The university graduate enters the labour market at a latter date, E_u, and similarly earns an income that increases then decreases with age (curve DEF). During his university studies the individual has had to give up the income described by the area "COSTS"; this is the income that he would have earned had he begun working at age E_s with a high school diploma. On the other hand, after completing his university studies, he will earn an income (Yu,t) greater than that (Ys,t) of the high school graduate; this difference is described by the area "BENEFITS". Since these costs and benefits are viewed through time, it is necessary to apply an appropriate discount rate to them. Appendix II describes in more detail the assumptions and calculations that are involved in this application of the human capital model. The results of this model, and their implications for regional development and for regional income disparities are discussed in the following sections.

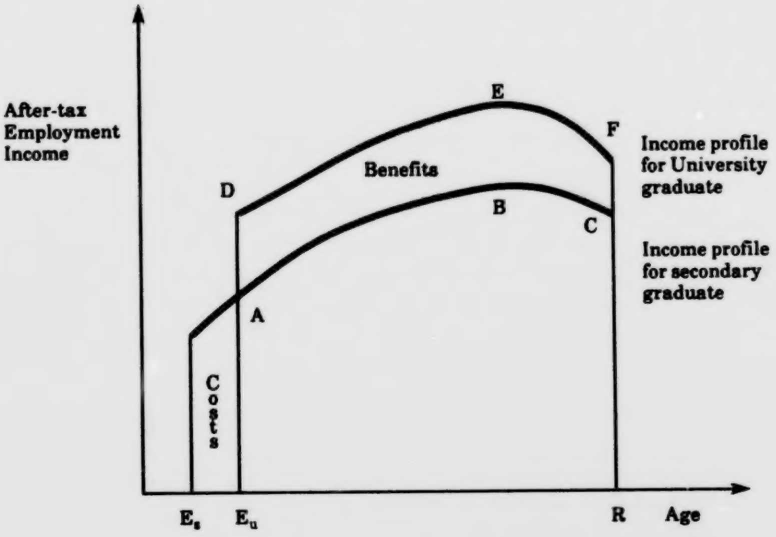
Regional Development

Table 6 shows that, contrary to the requirement established in condition 4, the public rates of returns on university education are not always higher than the alternative rate or return (10 percent). This is the case for three provinces: Newfoundland (7.6 percent), Alberta (9.7 percent) and British Columbia (3.2 percent); in these provinces public investment in university education will not be profitable from a financial perspective. Such investments will only be marginally profitable in Saskatchewan (10.3 percent), but will be more significantly profitable in Manitoba (11 percent), Ontario (13 percent), Quebec (13.7 percent), New Brunswick (12 percent) and Nova Scotia (12.6 percent).

For individuals, the private profitability of a university education is relatively high in all provinces except British Columbia. These estimates of private profitability are similar to those obtained by Mehmet (1977) for the beginning of the 1970s, that is between 18 and 22 percent. They are, however, higher than those obtained by Vaillancourt and Henriques (1986) for

Figure 1

The Human Capital Model


After-tax Employment Income
E
F
Benefits
D
B
C
A
Costs
Income profile for University graduate
Income profile for secondary graduate
E_s
E_u
R
Age

E_s = Labour market entry by secondary graduate.
E_u = Labour market entry by university graduate.
R = Retirement age, assumed to be equal for both types of worker.

1981, for the following reasons. First, they are calculated using the assumption of a one percent productivity growth, while Vaillancourt and Henriques assumed no productivity growth. Second, the returns to university education are calculated for those having completed 3 or 4 years of study and, thus, generally the recipients of a degree, while Vaillancourt and Henriques utilized all those who had completed some university education. Finally, Vaillancourt and Henriques compared their university population to individuals with either secondary or post-secondary schooling. The questions which emerge may thus be stated as: what are the implications of these results for regional economic development, for the reduction of regional disparities, and for the public policy in the area of university financing?

Table 6
Public and Private Rates of Return on University Education, Males, 1980

Provinces	(1) Private rate of return %	(2) Public rate of return %
Newfoundland	14.8	7.6
Nova Scotia	21.5	12.6
New Brunswick	21.2	12.0
Quebec	22.0	13.7
Ontario	22.0	13.0
Manitoba	18.5	11.0
Saskatchewan	17.0	10.3
Alberta	15.1	9.7
British Columbia	7.5	3.2

Source: Estimates by authors using Table A1.

From the point of view of the reduction of regional income disparities, the fifth condition specifies that the rates of return on human capital should be greater in the regions with lower incomes. As indicated in Table 6, this condition is not met in the case of Newfoundland, most particularly, nor in certain other provinces having an average income below that of Ontario. In the case of Nova Scotia and New Brunswick, however, the estimated rates of return are similar to that of Ontario; Quebec's rate of return exceeds Ontario's.

Investment in human capital contributes to the reduction of interregional income disparities in Alberta and British Columbia because their rates of return are below that of Ontario. In fact, relative to Ontario, investment in human capital on the part of Quebec, Alberta and British Columbia reduces regional income inequalities. For the other provinces, investment in human capital maintains or increases disparities. The efficiency of investment in university education as a tool for reducing regional income disparities is thus not clearly established, nor is its potential for generating economic development in certain Canadian regions evident. Thus, what should be the position of the federal and provincial governments towards this type of investment?

The Role of the Federal Government

The federal government intervenes in the area of university education for reasons of equity and efficiency. Essentially, the ability to support higher education differs between provinces. At an equivalent level of taxation, provinces with lower tax bases are not able to provide the same level of higher education services as the more affluent provinces. Similarly, the need for, and costs of, higher education differ between regions. Education is thus a federal concern to the extent that labour is, and should be, mobile in order to meet objectives of national employment, price stability, and economic growth.

Certain provinces, through the mobility of labour, can thus indirectly subsidize other regions by bearing educational expenses for which neighbouring provinces reap the benefits. Information on the geographic mobility of young university degree recipients for the period 1976-1981 shows that interprovincial flows are significant (Table 7). Newfoundland, Nova Scotia and New Brunswick have lost, respectively, 150, 550 and 600 degree recipients during this period, representing between 15 and 21 percent of gross flows. Ontario and Quebec together have lost 7,000 degree recipients (26 and 28 percent of the gross flows). Manitoba suffered net losses of 1,050 degree holders (28.8 percent), while Saskatchewan lost only 250 (9.4 percent).

Two provinces emerge as net beneficiaries from this process: Alberta (+6,750) and British Columbia (+2,850). This is

Table 7
Net Migration of Young Degree Holders, 1976-1981

Provinces	(1) In-migrants[1]	(2) Out-migrants[2]	(3) Net migration[3]	(4) Percentage of gross flows[4]
Newfoundland	300	450	-150	-20.0 %
Nova Scotia	1,500	2,050	-550	-15.5 %
New Brunswick	1,100	1,700	-600	-21.4 %
Quebec	2,650	5,400	-2,750	-34.2 %
Ontario	5,800	10,050	-4,250	-26.8 %
Manitoba	1,300	2,350	-1,050	-28.8 %
Saskatchewan	1,200	1,450	-250	-9.4 %
Alberta	9,200	2,450	+6,750	+57.9 %
British Columbia	5,050	2,200	+2,850	+39.3 %

Source: See Table 1. Data refer to province of residence in 1976 and 1981, and to males and females 25-29 years of age in 1981.

Notes:
1. An in-migration is registered for a province when an individual who resided there in 1981 did not reside there in 1976.
2. An out-migration is registered for a province when an individual who resided there in 1976 no longer resided there in 1981.
3. (1) − (2).
4. (3) ÷ [(1) + (2)].

somewhat surprising given the low private rates of return observed in these provinces, but could be influenced by a perception that the rates of return would be increasing in the foreseeable future due to the then ongoing (1981) resource boom. It remains, however, that the provinces which contributed to the education of these degree holders have not been indemnified or directly compensated for this externality effect.[4] The sixth condition is thus not met and this reinforces our conclusions concerning the inefficiency of present university financing policies and the reduction of regional income disparities. In its present form, the federal financing of Canadian universities contributes neither to regional economic development nor to the reduction of income disparities, in most cases. In this sense, the present policy may be viewed as containing elements of inefficiency and inequity.

In the longer term, private rates of return (and the collapse of resource-led booms) encourage degree recipients to move toward central Canada. From the viewpoint of location theory, it is much less expensive and, therefore, more rational, that after students are educated, a portion of them migrate toward those regions where their education is most profitable. In the absence of compensation from the federal government, this type of activity would be reduced. Thus, while the belief of certain low-income provinces that they can promote economic development through investment in university education is false, due to a non-profitable private rate of return and/or unfavourable net migration flows, this does not mean that the benefits from these investments are not large for the rest of Canada.

In order to be efficient and equitable, federal government higher education financing policies should take into consideration three principal criteria whose weights should be established on a political basis.[5] These criteria are: 1) investment in those regions where the public rates of return are highest; 2) investment in those regions where per capita income is low and where profitability justifies such investments; and 3) compensation for those provinces that generate externalities (net out-migration).

In general, since the return to investment for university education is equal to the highest level observed in Canada, it is thus necessary to increase federal investments in this area because they are profitable for the country as a whole; this real rate of return has now reached over 13 percent. In addition, this increased amount should be distributed in a different manner, taking into consideration the three criteria stated above.

As to the provinces, they must adjust their higher education policies to confirm to internal rates of return. In the case of Nova Scotia, New Brunswick, Quebec, Ontario and Manitoba indications are that an increase is in order; for Newfoundland and British Columbia a decrease is warranted. The proportion of federal and provincial financing should thus vary between provinces on the basis of the real beneficiaries and of inequalities in wealth. On the eve of revisions to the federal/provincial agreements on university financing, and at a time when the federal government has already allocated six billion dollars in this area, it appears desirable that these types of considerations be taken into account.

Appendix I

Controlling for Experience

In order to control for the effects of experience upon income, we have applied ordinary least squares regression to the following equation:

$$\ln Y_i = a_{10} + \sum_{j=1}^{6} a_{2j} S_{ij} + a_{30} E_i + a_{31} E_i^2 \qquad (1)$$

where

$\ln Y_1$ = natural logarithm of the annual income of each individual;

S_i = dichotomous variable equal to unity when individual i belongs to category j of education; j = 1, 2, . . . 6 where 1 = primary 5-8, 2 = secondary 8-9, and so forth. The category 0 = primary 1-4 has been omitted for the purpose of comparison.

E_i = number of years of experience = present age - age at the end of studies (calculated as years of study + 6).

This standard equation in the literature on human capital[6] enables the evaluation of income differentials associated with changes in educational structure while controlling for accumulated experience (E and E^2). One would expect that the coefficients estimated for a_2 would be a positive and that they would increase with education. In the case of the experience variables, one would expect the coefficient of E (a_{30}) to be positive in order to reflect the positive effect of experience on earnings, but the coefficient of E^2 (a_{31}) to be negative in order to account for the decreasing returns to experience through time. The results of the estimation of the equation, using 1981 census micro-data, are presented in Table A1.

As expected, the coefficients of the equation variables are positive, statistically significant and increasing for each province considered, but beginning only with education level secondary 11-13 (S_3). In the case of Newfoundland, for example, the coefficient of S_3 is 0.56; 0.62 for S_4; 0.81 for S_5; and 1.38 for S_6. The coefficients of E are similarly positive and significant, while those of E^2 are negative and significant. The R^2 values indicate that this equation explains between 21 and 30 percent of the inter-individual disparities in income, according to the province. The F-test of each equation is also highly significant. The relationship between education and income is thus generally confirmed at the level of each province.

Table A1
Regression Analysis of Employment Income, Males, 1980

	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
Constant (A_{10})	7.7195 (109.98) S	7.7571 (146.85) S	7.6849 (124.58) S	8.2850 (434.63) S	8.1751 (455.91) S	7.9951 (154.00) S	8.3080 (151.00) S	8.6172 (273.78) S	8.5076 (265.94) S
Primary 5-8 (S_1)	-.2534 (-4.01) S	-.2755 (-5.20) S	-.2552 (-4.56) S	-.2061 (-11.94) S	-.1488 (-8.03) S	-.1685 (-3.25) S	-.1933 (-3.45) S	-.2630 (-7.20) S	-.1401 (-3.86) S
Secondary 9-10 (S_2)	-.0181 (-.28)	-.0507 (-1.000) S	.0041 (-0.07)	-.0788 (-4.40) S	-.1579 (-8.97) S	-.0740 (-1.45)	-.1934 (-3.59) S	-.2493 (-7.81) S	-.1953 (-6.10) S
Secondary 11-13 (S_3)	.5638 (8.91) S	.3725 (7.72) S	.5256 (9.66) S	.2686 (16.11) S	.2231 (13.83) S	.4180 (8.78) S	.2644 (5.16) S	.1877 (6.45) S	.1367 (4.73) S
Post-secondary 1-2 (S_4)	.6243 (7.02) S	.4244 (6.40) S	.5347 (6.89) S	.3772 (16.09) S	.3295 (15.55) S	.5065 (8.04) S	.3445 (5.18) S	.2404 (6.28) S	.2111 (5.85) S
Post-secondary 3-4 (S_5)	.8171 (7.74) S	.7822 (11.06) S	.9110 (10.58) S	.7154 (32.14) S	.6461 (31.45) S	.7722 (11.93) S	.6397 (8.69) S	.5105 (13.62) S	.2508 (6.36) S
Post-secondary 5 + (S_6)	1.3872 (16.19) S	.9981 (14.35) S	1.0725 (13.66) S	.8795 (36.08) S	.8329 (37.45) S	.9292 (13.92) S	.7308 (9.81) S	.6646 (16.83) S	.5375 (14.32) S
Experience	.1058 (26.05) S	.1226 (39.64) S	.1188 (33.90) S	.09554 (90.47) S	.1125 (125.41) S	.1065 (41.25) S	.0923 (34.73) S	.0940 (58.35) S	.1033 (63.21) S
Experience^2	-.0016 (-20.65) S	-.0020 (-33.36) S	-.0019 (-28.70) S	-.0016 (-77.23) S	-.0019 (-107.30) S	-.0018 (-36.90) S	-.0015 (-31.38) S	-.0016 (-50.21) S	-.0018 (-55.18) S
R^2	.2853	.3027	.2928	.2396	.2798	.2747	.2136	.2406	.2249
F-Statistic	145.0 S	253.2 S	188.2 S	1392.4 S	2451.0 S	276.4 S	189.8 S	564.5 S	594.2 S
Number of Observations	2,888	4.649	3,619	35,323	50,459	5,818	5,562	14,232	16,357

T-Statistics appear between parentheses under the coefficients. An "S" indicates a coefficient significant at the 95% level.

Since the form of the equation is semi-logarithmic, and since the educational variables are dichotomous, it is necessary to transform the coefficients of these variables by the formula $e^{a}2j-1$. The result of this transformation provides us with an evaluation of the impact on earnings, expressed as a percentage of the attainment of a given level of education in relation to the primary 1-4 level. These figures are presented in Table 5 of the main body of the text.

Appendix II

Application of the Human Capital Model

The discount rate which equalizes costs and benefits corresponds to the internal rate of return of investment in university education, and thus:

$$\sum_{t=E_u}^{R} (Yu,t-Ys,t)/(1+r)^t - \sum_{t=E_s}^{E_u} C_{ut}/(1+r)^t = 0 \qquad (2)$$

This formula enables us to find the rate of return r of an investment in human capital. If this rate r is greater than 10 percent—or greater than eight percent according to Burgess (1981)—one can conclude that the investment is profitable. The rate of 10 percent corresponds to the real rate of return in Canada for investments in physical capital in the private sector and serves as a reasonable basis for comparison.

In order to evaluate the public and private rates of return on human capital for each province, it is necessary to consider the income profile by age for the levels of education chosen (secondary 11-13 and university 3-4). This is done using the results of the regressions presented in Table A1 of Appendix I, and using the assumptions that the growth of real productivity is one percent per year, that inflation is five percent per year, and that fiscal parameters are indexed five percent per year. Then the appropriate income data and cost data (described below) and formula 2 are used to calculate the rate of return.

In the case of private rates of return, the cost of university education is assumed to be equal to the income not earned by a student over eight months annually, to which must be added educational and other fees. Here we assume that the educational and other fees (equipment, paper, photocopiers, books) are on average equal to the expected income earned during the summer.[7] As for income, net after-tax personal income is utilized; this has been calculated by projecting through time the various parameters (rates, levels, exemptions) of the fiscal system in effect in 1981 with the aid of the model described in Lasserre and Vaillancourt (1984). The calculations have been made for a single male, taking into consideration the basic exemptions for contributions to the Canada and Quebec pension plans, to unemployment insurance, and to a registered retirement saving plan.

In the case of public rates of return, the contribution of individuals to society is equal to gross income (before taxes). The calculations of public profitability have thus utilized this definition of income. Public costs have been calculated using data on the costs of operation by student full-time equivalents.[8]

Footnotes

1. Scholarships and grants to students should be considered not as a cost but, rather, as a transfer payment.

2. Due to insufficient data, Prince Edward Island must be excluded. In addition, our analysis is limited to males since it is much more difficult to estimate income equations for female workers than for male workers. For example, it is practically impossible to generate valid estimates of their experience on the labour market.

3. The purpose of transfer payments is to offset inequalities in opportunities or to better distribute wealth. The inclusion of transfer payments in income data produces levels of income disparities between regions that are much less pronounced than when employment income is used. The data presented here are taken from the 1981 Public Use Data Tape produced by Statistics Canada.

4. On the other hand, it should be noted that the availability of oil or of natural gas at a price below the world market level can be viewed as an indirect method for Alberta, the province receiving the largest number of these migrants, to compensate the sending provinces.

5. This is due to tradeoffs which can be stated in terms of efficiency and equity.

6. For a detailed discussion of the theory of human capital see Addison and Siebert (1979).

7. The results obtained by Vaillancourt and Henriques (1986) and Cousineau (1984) indicate that this produces an estimate of returns on university education that is slightly below that which includes summer earnings, since the latter are higher than the direct costs of education.

8. Costs have been estimated using ***Educational Financial Statistics***, Statistics Canada (81-208), Table 15, line 12. The number of students is given by ***Education in Canada***, Statistics Canada (81-229), Table 22. A part-time student is set as equivalent to one-half of a full-time student.

References

Addison, John T. and W. Stanley Siebert, 1979. *The Market for Labor: An Analytical Treatment.* Santa Monica, California: Goodyear Publishing Company Inc.

Burgess, David, 1981. "The Social Discount Rate for Canada: Theory and Evidence". *Canadian Public Policy / Analyse de politiques*, 7:383-394.

Cousineau, Jean-Michel, 1984. "Le rendement de la scolarité universitaire au Québec". *Les cahiers de l'ACFAS, no. 23, Les ressources humaines et la croissance économique.* Québec: Presses de l'Université du Québec, 61-91.

Lasserre, Pierre and François Vaillancourt, 1984. "Impôt sur le revenu et investissement en capital humain". *Les cahiers de l'ACFAS, no 23, Les ressources humaines et la croissance économique.* Québec: Presses de l'Université du Québec, 95-115.

Mehmet, Ozay, 1977. "Economic Returns on Undergraduate Fields of Study in Canadian Universities: 1961 to 1972". *Industrial Relations.* 32: 321-339.

Slack, Enid, 1985. "The Implications of Federalism for Post-secondary Education". In *Access, Operations and Funding.* Toronto: Ontario Economic Council, 362-375.

Vaillancourt, François and Irene Henriques, 1986. "The Returns to University Schooling in Canada". *Canadian Public Policy / Analyse de politiques*, forthcoming.

PART FOUR

DEVELOPMENT PROSPECTS AND POLICY CHALLENGES

Chapter 12:

Regional Efficiency and Problems of Financing the Canadian Federation *

Yves Rabeau

Introduction

The experience of the past twenty years in the area of federal government transfers to individuals, to firms, and to other levels of government has raised a number of questions concerning the effect of these transfers on the mechanisms of resource allocation. Principally, it has been argued that the transfer payments from the central government to the provinces, designed to ensure a certain equality between regions in the availability of public services and in their levels of taxation, are able to promote a more efficient allocation of resources in the federation by avoiding an excessive interregional migration of manpower (Buchanan, 1950; Buchanan and Wagner, 1970; Buchanan and Goetz, 1972; Flatters *et al*, 1974). More recently, this principle has been invoked concerning the rents collected by the provincial governments on their natural resources (Flatters and Boadway, 1982).

* The author thanks professors F. Vaillancourt and A. Raynauld for their comments. G. Dufour, of the Quebec Ministry of Finance, has made useful technical comments. Michel Côté, of the Macdonald Royal Commission, has made certain comments on an earlier version of this paper presented at the conference of the ASDEQ in May 1985. The author also benefitted from comments and suggestions made at the presentation of this paper at the Still Living Together conference. Philippe Dubuisson served as principal assistant for this research; Yvon Boudreau provided technical support. This research was financed by a grant from the Social Sciences and Humanities Research Council of Canada (410-82-0727-R1). The translation of the original French version of this paper was done by William J. Coffey.

On the other hand, Scott (1950; 1952) has argued that the transfers from rich regions to poor regions can constitute an obstacle to market adjustment mechanisms in the poor regions by slowing the migration flows. The federal transfers to the provinces, combined with transfers to individuals, can hinder the mechanisms of macroeconomic adjustment between regions in a federation where all regions utilize the same currency (Thirsk, 1973; Courchene, 1978). Thus, certain provinces become more and more dependent upon federal transfers (Economic Council, 1980) in the functioning of their economy and in the process of balancing their public finances.

More precisely, the present system of financing is characterized by asymmetry at the level of both the public finance performance of the central government and the provinces receiving equalization payments. This situation does not stimulate the provinces to undertake measures to reduce their financial dependence upon the federal government. Further, under the present system, the implicit acceptance by the federal government of provincial measures which inhibit the process of economic growth in the low income regions obliges the federal government to increase its transfer payments to these regions.

The asymmetry of the present system can be summarized as follows:

- A province eligible for the equalization scheme can take measures profitable from an electoral perspective (e.g., an increase in the minimum wage) but which have the effect of slowing its economic growth, without the province having to bear the resulting costs. From a budgetary perspective, the equalization payments can in part compensate for the effects of the slowing of economic growth while unemployment insurance payments reduce the private costs of the loss of employment. The federal government thus finds itself giving financial support to measures taken at the provincial level. From a macroeconomic perspective, the deterioration of a province's current account is financed by transfer payments from the central government.
- On the other hand, if a province takes measures to improve its competitive position and succeeds in reducing its income gap relative to the Canadian average, from a budgetary perspective the increase in its revenues from its own sources will be offset by the reduction of equalization payments. If the elasticity of equalization payments in response to an increase in the provincial gross domestic product were higher than that of revenues from its own sources, the financial position of the province would only improve

marginally. Further, the federal government would benefit from an increase in its revenues and a decrease in its transfer payments to individuals (lower unemployment) and to the province, due to the latter's improved financial situation. By improving its own economic situation, the province thus reduces the federal deficit without correcting its own financial position.

The present study examines this aspect of Canadian public finance in the case of the Atlantic provinces and Quebec. As the incentive for these provinces to reduce the transfer payments that they receive from the federal government is clearly minimal, some principles are proposed upon which a modification of the present system of equalization can be based, with a view to reducing provincial dependence upon federal transfers.

Federal Budget and Transfers to Quebec and the Atlantic Provinces: 1970-1980

In order to clarify the scope of the problem under consideration, Table 1 presents data on federal financial support to Quebec and the Atlantic provinces for 1970 and 1980. More precisely, it shows the federal government's surplus (deficit) budgetary accounts for the regions.[1]

The federal government's budgetary balance per capita, which was a deficit in the Atlantic provinces in 1970, grew by 250 percent over the period. Excluding from the federal expenditures the short-term grants for the import of oil and for the regional allocation of interest payments on the public debt, the deficit per capita nevertheless grew by 190 percent. The equalization payments to the Atlantic provinces, which represented on average 25 percent of total revenues, grew on a per capita basis by 173 percent.

In Quebec, while the federal budget was in a surplus position in 1970, it was progressively transformed into a deficit over the decade, even when one excludes oil import subsidies and interest payments on the public debt. The surplus was $415 per capita in 1970 and the deficit reached $340 per capita in 1980 (both in 1982 constant dollars). The equalization payments which represented, on average, 12 percent of Quebec's total income over the period, grew in real and per capita terms by 42 percent. By comparison, the federal budget surplus in Ontario, excluding interest payments and petroleum subsidies, went from $921 per capita in 1970 to $862 per capita in 1980.

Over this ten-year period there was a significant increase of all federal government transfers to the Atlantic provinces and to Quebec. During the same period, the salaries in the Atlantic provinces and Quebec grew relative to the Canadian average, but without a corresponding increase in productivity (Rabeau, 1986). Further, the unemployment rates in these regions grew relative to the national average, especially in the second half of the decade.

Table 1
Federal Financing in Quebec and the Atlantic Provinces, 1970-1980 (1982 constant dollars)

	Budgetary Balance Per Capita						Equalization Payments Per Capita	
	Total Balance (1)		Excluding Oil Import Grants (2)		Excluding (2) and Interest Payments (3)		(4)	
	1970	1980	1970	1980	1970	1980	1970	1980
Atlantic	(1410)	(3516)	(1410)	(2566)	(1277)	(2435)	388	672
Quebec	189	(797)	189	(586)	415	(340)	251	356
Ontario	554	32	554	52	921	862	-	-

Figures within parentheses indicate deficits.
Source: Statistics Canada: 13-213, 13-351, 91-201.

These trends indicate that while the federal government increased its financial assistance to these provinces, their degree of competitiveness decreased; they also indicate that the central government, in the context of the present financial arrangements of the federation, has had to finance the deterioration of the current account of these provinces over the period.

Provincial Budgetary Balance and Equalization

The revenues of a province are essentially composed of revenues from its own sources and of federal transfers. Among the federal transfers are equalization payments, available to those provinces that meet the requirements of the program. Equalization payments vary with a province's level of economic activity.[2] Thus a rise in the gross domestic product in a province receiving equalization payments will have a positive income-effect upon its receipts from its own sources, while the impact upon its equalization revenues remains uncertain. On the one hand, an increase in economic activity can raise the tax revenues in all provinces, which tends to increase the equalization payments in the receiving province. But, on the other hand, the increase in economic activity in this province will have the effect of *reducing* its fiscal shortfall in relation to the Canadian average (or the average of the provinces actually utilized in the formula) for a number of revenue sources. Equalization payments are calculated as the algebraic sum of the differences between a province's tax receipts and the average receipts of those provinces specified in the formula. It is thus possible that due to an increase in economic activity in the receiving province, the fiscal deficit for certain sources of revenue would disappear or even become negative, i.e. change from a deficit to a surplus. If this fiscal deficit reduction or cancellation effect were greater than the effect of the general increase in tax revenues, equalization payments would decline. This reduction of equalization payments will be subtracted from the increase in revenues from a province's own sources.[3]

In particular, it is likely that a province which has a small fiscal deficit for several sources of revenue will lose its equalization rights related to these sources following an increase in regional economic activity, and that it will see its equalization payments decline when its fiscal position improves relative to the Canadian average. This possibility is an empirical question which is discussed for Quebec and the Atlantic provinces in Appendix I.

A Simulation of Budgetary Variation in Quebec and the Atlantic Provinces

Starting with the revenue equations described in Appendices I and II, the budgetary impact of a variation in revenue in Quebec and the Atlantic provinces has been examined. This involves a statistical exercise in which one calculates the impact upon the budget of a real increase of one percent in the gross domestic product of each region in 1981.[4] The evaluation of the budgetary impact of this variation in gross domestic product takes account of multiplier effects on the activity of other regions resulting from interregional leakages. For this purpose, we utilize the interregional multipliers developed by Fortin (1982). The elasticities calculated in Appendix II allow these effects to be accounted for. The increase in own-source revenues refers to the one percent increase in economic activity in the particular region, and no indirect effect is included. Calculations based upon macroeconomic relationships give approximate results which do not have the precision of calculations made using existing tax or intergovernmental transfer formulae. The results are presented in Table 2.

Table 2
Effect of a 1.0 Percent Increase in Regional Gross Domestic Product Upon the Provincial Revenues of Quebec and the Atlantic Provinces, 1985[5,6]

	Atlantic	Quebec
Self-Generated Revenue:		
- Income and other taxes	27	125
Federal Transfers[5]:		
- Net variation in equalization payments	(18)	(76)
Net Growth of Revenues	9	49

These results assume that provincial expenditures are not affected by the increase in the gross domestic product (GDP). If it is assumed that the increase in employment accompanying the growth of the gross domestic product reduces the number of persons receiving social assistance, the improvement in the budgetary situation of the provinces will be greater. In the case of Quebec, for example, if one employs the hypothesis that 25 percent of new jobs[7] are obtained by social assistance beneficiaries, the decrease in the portion of social assistance benefits financed by Quebec would be approximately $25 million. The improvement in Quebec's budgetary situation would thus reach $74 million.

The impact of the decrease in equalization payments on the budgets of the Atlantic provinces is relatively significant even if the elasticity of these payments to the GDP is lower than for Quebec. This is explained by the fact that equalization payments, as we have seen, constitute a significant portion (about 25 percent) of the budgetary revenues of the Atlantic provinces.

Thus, the results of this simulation suggest that, from the point of view of their budgetary balances, the governments of

Quebec and of the Atlantic provinces have a reduced incentive to take measures leading to economic growth. In particular, if such measures are not favoured by a significant portion of the electorate (for example, decreased labour market regulation) provincial governments will be less inclined to adopt them, especially where their positive financial effects are diminished by the system of intergovernmental transfers. Rather, the incentive would be to do the opposite, that is to take measures profitable from an electoral viewpoint but which could diminish economic growth without seriously affecting, thanks to federal transfers, the budgetary situation of the region.[8]

Impact on the Federal Budget

The increase in the GDP of the Atlantic provinces or of Quebec affects the federal budget directly at the regional level and indirectly through multiplier effects upon other regions. The federal budgetary feedback effect is thus more significant than that of the provinces.[9]

For the federal government, simulations of regional GDP increases produce the following results:

Table 3
Effect of a 1.0 Percent Regional GDP Increase Upon Federal Finances, 1981
($ millions)

	Atlantic	Quebec	
		(1)	(2)
Revenue increase	37	140	140
Expenditure reduction:			
- Transfers to provinces			
.Equalization	18	76	76
.Social Assistance			25
- Transfers to individuals:			
.Unemployment Insurance	90	211	125
Net improvement	145	427	366

The asymmetrical effect upon the budgetary balances follows from these results. While the increase in the GDP of the Atlantic provinces and of Quebec creates a minor improvement in the budgetary position of the provinces, that of the federal government improves more significantly. For a one percent increase in GDP in Quebec, the net improvement of the federal budget would be approximately nine (427/49) times higher than that of Quebec while, in general, the total of federal revenues is less than three times larger than that of Quebec. Thus, by taking measures of economic improvement, the provinces (as the provincial finance ministries have indicated) help to reduce the federal deficit without benefitting from a significant improvement in their own financial situations.

A Reappraisal of the Present System of Financing

Certain programs of transfers to individuals are presently the object of reappraisal. The government of Quebec (1984) recently proposed a modification of its program of social assistance through incentives for returning to work. The federal government has begun to examine the program of unemployment insurance with a view to making it less costly and more efficient. Finally, the Macdonald Commission has proposed the establishment of a guaranteed income program which would be more effective than the present system in promoting efficiency among all participants in the economy.

A similar examination seems desirable in the case of federal government transfers to the provinces. Already facing increasing budgetary difficulties, the federal government tried to limit the growth of equalization payments during the renewal of its agreements with the provinces in 1981-82. The new formula uses as the Canadian average that of five representative provinces and excludes the non-representative cases such as Alberta (Courchene, 1983). This change in the formula succeeded in reducing the increase in federal transfers[10] but did not address the real roots of the problem.[11]

Under the present system, because of the unconditional nature of equalization payments, the federal government can still find itself in the situation where it must implicitly allow inefficient practices for the management of provincial resources. The universality of the unemployment insurance program also means that the federal government must absorb a portion of the cost of provincial measures which have the effect of increasing the unemployment rate. On the provincial side, we have shown that the incentives for the efficient management of resources have been seriously weakened. Due to the asymmetry in the reaction of budgetary balances, the provincial governments are hardly interested in improving the financial situation of the federal government.

Further, equalization payments are an integral part of the provinces' budgetary process and thus of their policy formulation process and of their financing. Provincial politicians and civil servants that evaluate the cost of a given measure always calculate the portion of financing that will be assumed by the federal government. This system of dependence upon the federal government means that when the latter tries to revise its financial programs, as in 1982, the provinces find themselves in difficulty and accuse the federal government of destabilizing their public finances.

In the long term, this system of unconditional transfers from the central government, combined with programs of transfer to individuals, has elements of instability associated with it. These types of payments have increased considerably since the 1960s without gaps in income, in productivity, and in fiscal burden narrowing significantly between the more affluent and the less affluent regions. In fact the gaps have remained constant and have even grown, thanks in part to the existing system of federal transfers. The growth of these gaps brings an increasing flow of federal transfers; dependence seems to have no limit in the long term and is in fact a vicious circle.

Some Principles for Reform

How can the finances of the Canadian federation be extricated from this dependency trap? There is no simple answer to this problem because several fundamental policy issues are being questioned, especially the notions of provincial autonomy and the degree of centralization of Canadian federalism. The unconditional nature of the payments constitutes one of the major difficulties of the transfer system since it implies provincial autonomy and the right of the provinces to spend. Further, if the federal government were to require the provinces to take measures oriented towards efficiency in order to be able to receive transfers, the provinces would be able to claim that the federal government is also guilty of inefficiency and that they have to bear the cost of its inefficiency. The performance of the federal government in programs having a negative effect upon the allocation of resources is not necessarily better than that of the provinces.[12]

In fact the problem of efficiency in intergovernmental transfers exists at all levels of government. There is an analogous problem that occurs when a province finances a public organization whose operation is not limited by the usual market forces.[13] In addition, the objective would be to find a transfer mechanism which incorporates incentives for economic efficiency without causing a greater concentration of decision-making power at the federal level, or without giving the central government a superior authority in the area of resource management. In sum, it is not a question of further centralizing power but, rather, of the federal government utilizing in a different manner its power to transfer funds between the regions of Canada.

Constitutionally, the role of the federal government is stated very generally and does not require a particular type of equalization formula.[14]

We are now able to suggest several basic principles which should underlie changes in the equalization program:[15]

The abandonment of the basic principle of unconditional payments

A portion of equalization payments could remain unconditional but the other portion should be linked to indices of the performance of the provincial economy. For example, the fiscal burden of a province, the level of minimum wage, and barriers to interprovincial trade are indicators that could be considered. If the structure or the level of taxes slows the economic growth of a province, the federal government should not assume all the costs of such a situation through its equalization payments. There would thus be in the equalization system a mechanism designed to financially penalize those provinces which are reducing their own competitive ability.

Financial bonuses for provincial measures favouring a more efficient allocation of resources

We have seen that under the present system an improvement in the relative economic position of a province brings, in the short-term, a decrease in equalization payments. Under an incentive system one would expect a transition period where federal transfers would not decrease or would perhaps temporarily increase. In essence this would represent an application to federal-provincial financial relations of the principle according to which a worker who rejoins the labour market has his financial situation improved while looking for a job, rather than it remaining the same or deteriorating due to the vagaries of the fiscal system. In the medium term, this incentive system could cause provinces to reduce their dependence upon federal transfers.

The application of these principles will be relatively complex. It would first be necessary to establish an equalization formula and to identify a set of indicators of regional economic efficiency. In order to adhere to the principles, the application of the formula would have to be administered by an impartial and independent commission of politicians. The federal government and the provinces would have to abide by the decisions of this commission. The basic rules should not change often in order to avoid surprises for the players. Following the decisions of the commission a jurisprudence would be created to which the provinces and the central government would have to adjust.

In this modified equalization system the objective of the redistribution of income which has prevailed would become less important while that of the creation of wealth would become more important. Finally, one must remember that the equalization system is clearly only one aspect of the financing of the Canadian federation (Courchene, 1983). The issue of incentives for economic growth and efficiency is also applicable to other federal government transfer programs.[16] If one undertakes a modification of the basic principles of equalization, it would be preferable that this modification be done within a more general framework in which the whole question of transfers and economic efficiency would be analyzed.

In the context of the financial difficulties that presently concern the federal government, the reappraisal of programs of transfers to the provinces and to individuals appears to be inevitable. The responses of the federal government to the recommendations of the Macdonald Commission could be the opportunity to undertake a major modification of all transfer programs. This modification should not be delayed very long if one wishes to avoid the establishment of emergency measures by the federal government. The reform of programs of transfers to provincial governments and to individuals will no doubt be lengthy, in the Canadian tradition, since it implies a major change in mentality regarding the financing of the Canadian federation.

Appendix I: Estimation of Revenue Equations for Quebec and the Atlantic Provinces

Equalization

First, an equation has been estimated describing the behaviour of equalization payments as a function of gross provincial revenue. This involved macroeconomic modelling over a sample period. Although this method of estimating the variation of equalization payments has a pedagogic value, it only yields approximative results compared to the precise calculations which must be made each year in order to evaluate the level of equalization payments. As necessary, we employ these calculations to correct the results of the estimation.

The equation for per capita equalization payments is as follows:

$$\frac{DR_i}{P_i} = \sum_{j=1}^{29} \left[\sum_{i=1}^{10} \frac{t_{ij}\ A_{ij}}{A_{cj}} \right] \left[\frac{A_{cj}}{P_c} - \frac{A_{ij}}{P_i} \right] \qquad \text{(I.1)}$$

where DR_i = equalization payment to province i;
t_{ij} = effective rate of taxation for source j;
A_{ij} = fiscal capacity j of province i;
P_c = Canadian population;
P_i = population of province i.

In order to estimate the effect of a variation in economic activity upon the right to receive equalization, various versions of equation I.1 have been employed. A first linear approximation that has been estimated is the following:

$$\frac{DR_i}{P_i} = \beta_0 + \beta_1 \left[\frac{Y_c}{P_c} - \frac{Y_i}{P_i} \right] + \mu_t \qquad \text{(I.2)}$$

where the fiscal capacities have been replaced by the gross domestic product (Y_i) of the region and of the group of regions (Y_c). The use of an average taxation rate for the term $\sum_{i=1}^{10} t_{ij}\ A_{ij} / A_{cj}$ has clearly improved the results. The estimate of the average tax has been obtained by dividing the sum of provincial revenues subject to equalization by the sum of the gross domestic products of the 10 provinces.

It must be stressed, however, that the use of provincial GDP as a macroeconomic measure of the fiscal capacity of a province in terms of the equalization program poses certain problems (Department of Finance, 1981). The fiscal system takes into account the average taxation practices in Canada, which is not a macroeconomic measure in the manner of the GDP. For the Atlantic provinces, the use of GDP tends to underestimate the fiscal capacity associated with the equalization program. On the other hand, for Quebec the GDP has historically tended to overestimate the fiscal capacity which is ascribed to the equalization program. This overestimation of fiscal capacity should thus yield an estimated coefficient greater than unity for the second term.

The study period runs from 1967 to 1981. Beginning in 1967 the "representative" equalization system was adopted. Over the period, the Canadian average was calculated using 10 provinces. In order to eliminate the effects of several variations in the formula that occured over the period, a chronologic series of equalization payments standardized to the 1977 levels has been utilized (Department of Finance, 1981).

Finally, it was also necessary to take into account some administrative delays in the payments made to the provinces.

The following results has been obtained by the ordinary least squares method:[17]

Québec (q):

$$\frac{DP_{qt}}{P_{qt}} = \underset{(0.2)}{-1.9} + \underset{(22.7)}{1.4}\, tm_q \left(\frac{Y_{ct-1}}{P_{ct-1}} - \frac{Y_{qt-1}}{P_{qt-1}}\right) \tag{I.3}$$

$R^2 = 0.97$; D.W. $= 1.5$

Atlantic provinces (m):

$$\frac{DP_{mt}}{P_{mt}} = \underset{(-0.3)}{-3.2} + \underset{(23.4)}{0.9}\, tm_m \left(\frac{Y_{ct-1}}{P_{ct-1}} - \frac{Y_{mt-1}}{P_{mt-1}}\right) \tag{I.4}$$

$R^2 = 0.99$; D.W. $= 2.3$

As expected, the constant is not significant, suggesting that the estimated relationship expresses well the equalization formula. Similarly, the coefficient estimated for Québec exceeds unity and that of the Atlantic provinces; this in part reflects the overestimation of the fiscal capacity of Québec. In the case of the Atlantic provinces, the underestimation is relatively minor since the coefficient is very close to unity. Associated with these deviations in coefficients are deviations in the elasticities of equalization payments relative to economic activity. These elasticities are calculated in Appendix II.

The higher elasticity for Québec could be explained in part by a higher elasticity of fiscal capacity relative to economic activity. However, the empirical analysis of the behaviour of self-generated fiscal receipts suggests that the differences in elasticity are not great; they can be attributed to varying levels of fiscal deficiencies which underlie the right to receive equalization payments.

The Atlantic provinces have a significant and relatively stable deficiency for most revenue sources over the study period. Québec's fiscal deficiency is based upon a smaller number of revenue sources and is less significant than that of the Atlantic provinces. Thus, for about a third of the fiscal bases for which Québec evidenced a shortage at a given moment during the study period, one can consider them to be marginal (the ratio A_i/A_c / P_i/P_c being greater than 93 percent in these cases).[18] Under these conditions, an increase in economic activity in Québec (Y_q) can significantly reduce or eliminate its right to receive equalization payments for certain sources of revenue. Conversely, a decline in Québec's economic activity relative to the rest of Canada can expand the number of sources in which Québec has a fiscal deficiency and can thus increase its eligibility for equalization. In other words, as Québec has a smaller fiscal deficiency, an increase in economic activity and in fiscal bases *ceteris paribus* tends to produce a proportionally larger reduction of its difference with the Canadian average than in the case of the Atlantic provinces.

Provincial Own-Source Revenue

In the taxation equations, short-term and long-term elasticities have been distinguished; the former have been utilized in the calculations. The equation for income tax takes account of progressive rates and, as necessary, of the effect of inflation. The study period runs from 1968, when the fiscal agreements between Ottawa and the provinces were stabilized, to 1982, using annual data. From the various equations estimated, the following have been retained:

Québec:

$$TY_q = \underset{(-2.4)}{-904.7} + \underset{(4.1)}{0.082Y_q} + \underset{(1.1)}{0.365T.IP} \qquad (I.5)$$

$R^2 = 0.99$; D.W. = 2.3

where TY = tax on income;
Y = gross domestic product (in current dollars);
T = long-term trend
IP = deflator for the gross national expenditure (Canadian index).

Atlantic provinces:

$$TY_m = \underset{(4.9)}{-136.4} + \underset{(2.8)}{0.043Y_m} + \underset{(1.1)}{0.068T.IP} \qquad (I.6)$$

$R^2 = 0.98$; D.W. = 1.92

Thus the estimated elasticity for the tax on individuals relative to income Y is about 1.1 for Québec and 1.08 for the Atlantic provinces. For other income categories, elasticities near 1.0 were obtained. A calculation of moving average elasticities gave similar results. An elasticity of unity for the current GDP has thus been retained.

Appendix II: Calculation of Equalization Payment Elasticities

Equation (I.3) has been modified in the following manner:

$$\frac{DR_i}{P_i} = \beta_0 + \beta_1 \, tm_i \left(\frac{Y_R + Y_i}{P_c} - \frac{Y_i}{P_i} \right) + u_t \quad \text{(II.1)}$$

where Y_R = GDP in the regions other than i.

First of all, beginning with equation (II.1), we have established the partial elasticity of equalization payments per capita in region i in relation to Y_i (direct effect) and in relation to Y_R. The calculation is based upon the assumption of a constant population at both national and regional levels. We have also assumed that the variation in Y_i does not effect tm_i. Personal income tax can make tm_i increase but we assume that this effect is negligible overall.

Thus by taking the total differential of equation (I.4), in which we have replaced tm, P_c and P_m by their mean values over the study period, and by multiplying the partial derivatives by their mean values, we arrive at the following elasticities:

Québec:

$$\frac{\partial (DP_q/P_q)}{\partial Y_q} \; \frac{\bar{Y}_q}{(D\bar{P}_q/P_q)} = -5.3; \qquad \frac{\partial (DP_q/P_q)}{\partial Y_R} \; \frac{\bar{Y}_R}{(D\bar{P}_q/P_q)} = 6.3$$

Atlantic provinces:

$$\frac{\partial (DP_m/P_m)}{\partial Y_m} \; \frac{\bar{Y}_m}{(D\bar{P}_m/P_m)} = -1.5; \qquad \frac{\partial (DP_m/P_m)}{\partial Y_R} \; \frac{\bar{Y}_R}{(D\bar{P}_m/P_m)} = 2.4$$

These results have been compared to the accounting calculations that one can make using the equalization payments formula. In the case of Quebec, the calculations made by the

Department of Finance confirm, as indicated in Appendix I, that the coefficient of equation (I.4) is overestimated because of the choice of the macroeconomic indicator of Quebec's fiscal capacity. The Quebec Department of Finance's implicit elasticity regarding the "leakages" of equalization revenue (which does not, however, take into account the multiplier effect of the revenue of the other provinces when Quebec's GDP grows) is approximately 62 percent of the elasticity value that we have obtained. In order to correct the bias in equation (I.4), beginning with the Department of Finance data, we have utilized an elasticity which is 70 percent of the value that we have obtained.[19] In the case of the Atlantic provinces, no such correction appeared to be necessary.

Appendix III: Variation in the Elements of the Federal Budget

Over such a short study period, it is difficult to identify the changes in elasticities due to the tax indexation which began in 1974. In addition, we have calculated elasticities on an annual basis for the period 1974 to 1982. As a general rule the elasticities were approximately unity; we have thus employed a unit elasticity in order to estimate the increase of federal income tax.

For five regions we have estimated an equation for indirect taxes over the period 1962 to 1982:

$$\mathrm{TIF} = \underset{(0.5)}{187.8} = \underset{(17.8)}{0.04\mathrm{Y}}$$

$$R^2 = 0.94;\ \mathrm{D.W.} = 1.52$$

where TIF = indirect federal taxes;
Y = GDP in current dollars.

Once again, the elasticity obtained through this relation is close to unity (0.97), if one utilizes mean values over the study period. A unit elasticity has thus been employed in the estimation of the variation of indirect taxes in each region. With regard to taxes on the profits of corporations, for the set of regions we have utilized the following relationship:

$$\mathrm{TPF} = 97.5 + 0.02\mathrm{Y} + 11686.9\ (\mathrm{P/P})$$

$$\mathrm{R2} = 0.95;\ \mathrm{D.W.} = 1.72$$

where TPF = tax on corporate profits
P/P = national inflation rate in percent (synthetic deflator for the gross national expenditure)

The elasticity of TPF relative to Y is 0.8 in this case; this value has been employed to establish the increase in TPF in each region.

Notes

1. The budgetary balance is equal to the total of estimated revenues for the region (Statistics Canada: 13-213) minus the total of federal government expenditures, including the gross formation of fixed capital. The data are stated in 1982 constant dollars by employing the Canadian deflator for the gross national expenditure; they are stated on a per capita basis by employing data on the population of each province (Statistics Canada: 91-201).

2. Certain federal transfers other than equalization payments vary as the need arises. The financial agreements between the federal government and the provinces indicate that the federal transfers vary with the fluctuations in the tax points upon which the agreements are based. The federal government also finances a portion of social assistance payments. Thus, when economic activity increases in a province, federal transfers of social assistance decline because the allowable shared expenditures decrease, and also because the tax points related to the financing of the program of public assistance increase.

3. See Rabeau (1985) and Courchene and Beavis (1973) for a mathematical treatment of this question.

4. It is assumed that the real increase has no effect upon inflation.

5. Two separate simulations: one increasing the gross domestic product of the Atlantic Provinces, all things being equal elsewhere, and the second increasing the GDP of Quebec.

6. As indicated in footnote 2, we do not take into account the effect of the variation in tax points, which tends to somewhat underestimate the loss of provincial revenues.

7. The increase in employment associated with an increased GDP has been calculated utilizing a constant average productivity in the commercial non-agricultural sector. The increase in employment occurs solely in the private sector.

8. This issue could be examined in the framework of the model proposed by Dudley (1985), containing both public and private market sectors.

9. In order to establish the effect of a variation in the GDP of Quebec or of the Atlantic provinces upon federal finances, variations in the GDP of the other regions have been evaluated utilizing the multipliers estimated by Fortin (1982). By retaining the hypothesis of constant average productivity in the private sector, the total variation in employment in Canada has also been obtained. A tax elasticity on federal government revenue has been estimated for each region. For other revenues, taxation equations have been estimated at the national level (see Appendix III). If it is assumed that an increase in employment reduces the number of unemployment insurance beneficiaries by the same amount, one obtains the level of reduction of federal expenses for this purpose by multiplying employment by region by the average payments in each region. An additional calculation was made by assuming that in Quebec 25 percent of the jobs created would reduce the number of social assistance beneficiaries, which are financed at a level of 50 percent by the federal government. The saving in equalization payments is obtained directly from Table 2.

10. In Quebec in 1981-82, during the recession, per capita equalization payments increased by 0.1 percent in real terms. In the Atlantic provinces they decreased by about 2.0 percent.

11. See Courchene (1983) for an evaluation of the changes in the equalization program.

12. See, for example, the study of the Ontario Economic Council (1983) on the Canadian economic union.

13. The financing of the Montreal Urban Community Transportation Commission by the provincial government has presented a major problem of efficient resource management since the 1970s. The rapid increase in salaries witnessed in this public organization has been in part absorbed by provincial financing.

14. In particular, it does not appear that the constitution assumes that transfers will be unconditional in nature:

    "Parliament and the Government of Canada accept the principle of making equalization payments in order to give the provincial governments sufficient revenues to ensure public services at comparable levels of quality and taxation." (Canadian Constitution, Part III, article 36(2); translation from French).

15. Courchene (1983) emphasizes the importance of economic growth incentives in an equalization program.

16. The issue of social assistance, which was analyzed in the Quebec White Paper on Taxation (1985), also is of interest to the federal government which assumes half of the cost of the program.

17. t- values are shown in parentheses.

18. For the Atlantic Provinces there are only a few revenue sources for which the ratio exceeds 90 percent. For major taxes, such as that for individuals, the Atlantic provinces' deficiency manifests a ratio of about 60 percent, while it is about 90 percent or higher for Quebec.

19. Our calculation of the effect of change in GDP upon federal transfers to the provinces does not take into account the effect of tax rate variations (see note 2).

References

Boadway, R. and F. Flatters, 1981. "The Efficiency Basis for Regional Employment Policy", *Canadian Economic Review*, 14, 1: 58-77.

____________ and F. Flatters, 1982. *Une analyse économique de la péréquation*. Ottawa: Economic Council of Canada.

Buchanan, J.M., 1950. "Federalism and Fiscal Equity", *The American Economic Review*, 40, 4: 583-599.

____________, 1952. "Federal Grants and Resource Allocation", *Journal of Political Economy*, 60, 3: 208-217.

____________ and C.J. Goetz, 1972. "Efficiency Limits of Fiscal Mobility: An Assessment of the Tiebout Model", *Journal of Public Economics*, 1, 1: 25-43.

____________ and R. Wagner, 1970. "An Efficiency Basis for Federal Fiscal Equalization". In J. Margolis (ed.), *The Analysis of Public Output*. New York: Columbia University Press.

Conference Board of Canada. *Quarterly Provincial Forecast*.

Conseil économique du Canada, 1980. *Au-delà de la dépendance : pour une productivité accrue à Terre-Neuve*. Ottawa: Approvisionnements et Services Canada.

____________, 1982. *Le financement de la confédération d'aujourd'hui à demain*. Ottawa: Approvisionnements et Services Canada.

Courchene, T.J., 1978. "Avenues of Adjustment: The Transfer System and Regional Disparities". In M. Walker (ed.), *Canadian Confederation at the Crossroads: The Search for a Federal-Provincial Balance*. Vancouver: The Fraser Institute, 145-186.

____________, 1981. "A Market Perspective on Regional Disparities", *Canadian Public Policy*, 7, 4: 506-518.

_____________, 1983. "Canada's New Equalization Program: Description and Evaluation", *Canadian Public Policy*, 9, 4: 458-475.

_____________ and D.A. Beavis, 1973. "Federal-Provincial Tax Equalization: An Evaluation", *Canadian Economic Revue*, 6, 4: 483-502.

Dudley, L., 1985. "Implicit Labor Contracts and Public Choice: A General Equilibrium Approach", Cahier 8518, Département de sciences économiques, Université de Montréal.

Flatter, F.R., J.V. Henderson and P.M. Mieszkowski, 1974. "Public Goods, Efficiency and Regional Fiscal Equalization", *Journal of Public Economics*, 3, 2: 99-112.

Fortin, P., 1982. "L'engagement des provinces dans la régulation de la conjoncture : fondement, extension et modalités". Ottawa: Conseil économique du Canada, Document no 214.

Gouvernement du Canada, Ministère des finances, 1981. *Les arrangements fiscaux dans les années quatre-vingt*, Ottawa.

_____________, 1981. *Calcul des droits provinciaux pour les années 1967/68 et 1976/77 selon la formule de 1977*. Ottawa.

_____________, 1979 à 1981. *Péréquation des recettes provinciales-calcul fédéral (1978-79 à 1981-82)*. Ottawa.

_____________, 1984. *Revue économique*. Ottawa, (avril).

Gouvernement du Canada, 1982. *La loi constitutionnelle de 1982*, Article 36, Ottawa.

Gouvernement du Québec, Ministère des affaires sociales (Données sur l'aide sociale).

Gouvernement du Québec, Ministère des finances, 1984. *Livre Blanc sur la fiscalité des particuliers*, Quebec, 43 p.

Graham, J., 1964. *Intergovernmental Fiscal Relationships*. Toronto: Association canadienne d'études fiscales.

Polèse, M., 1981. "Regional Disparity, Migration and Economic Adjustment: A Reappraisal", *Canadian Public Policy*, 7, 4: 507-525.

Rabeau, Y., 1985. "Bien-être social ou bien-être provincial : vers une refonte du programme de péréquation". Cahier de recherche no 8545, Département de sciences économiques, Université de Montréal.

_____________, 1986. "Les salaires, les régions et la stabilisation économique", *Canadian Journal of Regional Science*, 9, 1.

Scott, A.D., 1950. "A Note on Grants in Federal Countries". *Economica*, 17, 68: 416-422.

_____________, 1952. "Federal Grants and Resource Allocation", *Journal of Political Economy*, 60, 4: 534-538.

Statistique Canada. *Comptes économiques provinciaux*, Cat. no 13-213, Ottawa, 1972-77 à 1967-82.

_____________. *Finances publiques provinciales*, Cat. no 68-207, Ottawa, 1967-1982.

_____________, 1981. *Enquête sur la population active*, Cat. no 71-001. Ottawa.

_____________, 1984. *Statistiques chronologiques sur la population active*, Cat. no 71-201, Ottawa.

Thirsk, W., 1973. "Aspects régionaux de l'inflation et du chômage". Ottawa: Commission des prix et des salaires.

Trebilcock, M.J., J.R. Prichard, T.J. Courchene and J. Whalley, 1983. *Federalism and the Canadian Economic Union*. Toronto: Ontario Economic Council.

Winer, S.L. and D. Gauthier, 1982. *Les migrations internes et la structure budgétaire d'un état fédéral*. Ottawa: Conseil économique du Canada.

Chapter 13:

The State and Development: The Politics of Regional Development Policy

---

Donald J. Savoie
John Chénier

Introduction

As in other western democracies, governments in Canada over the past twenty years have brought forward numerous programs and initiatives to promote economic and social development. Wars have been declared on regional disparities, on poverty, and on a host of other perceived public policy problems. Few observers or political actors would claim that the wars have been won; yet, many of them have become war-weary and are now calling for governments to reduce the resources directed towards these causes. Some have even suggested that, in a number of instances, government efforts have had the opposite effect to what was intended. It is argued, for example, that regional development programs have made slow-growth regions dependent on government grants and subsidies and have thus exacerbated Canada's regional problems (Courchene, 1981). It is the purpose of this chapter to review past federal regional development efforts and to offer some observations concerning possible directions for future efforts.

The role of governments is now under attack not only from critics outside the government, but also within it. The federal Minister of Finance, Michael Wilson, bluntly stated in his 1985 budget speech that the "Government is not only too big, it also reaches too far into almost every corner of the economy .... Instead of encouraging strength, many actions perpetuate inefficiency" (Wilson, 1985:11). Mr. Wilson was echoing the argument of Prime Minister Mulroney and his Progressive Conservative party during the election campaign, arguments which gave rise to a massive mandate for the new government. In the campaign, Mulroney had stated repeatedly that: "We are going to create a new economic environment in Canada by making it clear to everybody that it is the private sector, not the State, that is the driving force of the economy."[1]

There are several indications that the government intends to "make good" on this election promise. The Minister of Finance, in his two major speeches in the House, hung a huge question mark on the great majority of government programs (Wilson, 1984; 1985). The Neilsen Task Force carried out a detailed examination of government programs with the intention of eliminating "unnecessary" or redundant activities.[2] The need to address "the debt problem" also adds impetus to those who insist upon less government intervention in society. Debt charges are now the fastest growing component of government expenditures and account for over 20 percent of Ottawa's expenditure budget.

The Importance of Transfer Payments

Several likely areas have been identified for government spending cuts. These include government overhead and administrative costs, transfers to the provinces, regional and industrial incentives programs, agricultural subsidies, job creation programs, and transportation subsidies, among others. On the face of it, the economic development envelope and, more particularly, regional development, appear to have been singled out for spending cuts. As of 1985, $250 million already had been cut from the economic and regional development envelope, and Ottawa had announced its intention to limit the growth of transfers to the provinces, thus yielding annual savings of $2 billion by the end of this decade (Wilson, 1985:18; Department of Finance, 1985:12).

Predictably, slow-growth regions reacted quickly and negatively not only to budget cuts, but also to the government's policy of reducing the role of government in the economy. In this latter regard, the three Maritime premiers have ignored party lines and urged the federal government to move cautiously. The Atlantic Provinces Economic Council (APEC), meanwhile, has pointed to the importance of government activities in the economy of the Atlantic region and has urged Ottawa not to abandon this role (APEC, 1985). The Council argues that the region's private sector is incapable of taking up the slack if the federal government reduces its presence in the region's economy.

The importance of federal government spending to the Atlantic region has been made clear in a number of studies. Over the past decade, Ottawa has earmarked about $200 million a year to the region for special economic development measures. Federal transfer payments to the four Atlantic provinces account for over 40 percent of provincial revenues and federal transfer payments to individuals in the region account in large part for whatever progress that the Atlantic provinces have made in catching up to the national per capita income average.

The federal government's presence in the region, along with transfer payments, has also contributed substantially to closing the gap with the national average on a number of fronts in the provision of public services. Between 1962 and 1979 the Atlantic provinces moved considerably closer to the national average in health and education expenditures. Newfoundland, for example, now has a per capita education expenditure level within 7 percentage points of the national average. In the health field, Newfoundland's per capita spending moved from 46 percent of the national average to 81 percent in the same period. Provincial hospital bed capacity per capita was within 15 percentage points of the national average in 1981, compared with 26 percentage points in 1961 (Savoie, 1986:Ch 10).

One can easily understand that provincial governments and interest groups in the region would wish to protect the progress that has been made in delivering an acceptable level of public services without forcing an onerous and unfair tax burden upon the residents of the region. To many, these achievements are viewed as a fundamental tenet of Canadian federalism and a move away from them would constitute a serious threat to national unity. Equalization payments, it has been suggested, are "the glue that holds the country together." Article 36 of the 1981 Constitution Act talks about regional opportunities and, more significantly, enshrines in Canada's constitution the federal equalization program or federal transfer payments to poorer provinces (Canada, 1982).

Transfer payments to the provinces under the equalization program thus offer limited scope for Ottawa to cut back on spending. Similarly, recent political developments would suggest that transfer payments to individuals under such programs as old age pensions and family allowances also offer limited potential for reducing government spending. One area singled out by the Macdonald Commission, and now the subject of further study by the Forget Commission, is Unemployment Insurance. The Macdonald Commission has recommended the elimination of extended regional benefits, the imposition of U.I. premiums linked to the incidence of unemployment and the extension of the qualifying period. Implementation of such measures would imply a serious diminution in the purchasing power of Atlantic Canada. Although there is scope for concern over possible negative effects, one cannot say that all federal transfer payments to provinces and individuals should be sheltered from attempts to cut back federal spending. There are a number of such payments, including some under the regional development banner, that ought to be reviewed. Such a review may not only offer an opportunity to reduce Ottawa's expenditure budget but also give new direction to Canada's regional efforts.

A Review of Major Regional Development Programs

The leading edge of Ottawa's regional development efforts over the years has been the programs of the Department of Regional Economic Expansion (DREE), and more recently those of the Department of Regional Industrial Expansion (DRIE) and the Office for Regional Development. Under both administrative structures, two programs essentially provided the basis for intervention. The first is an industrial incentive assistance scheme to encourage investors to locate in slow-growth regions. The second involves broad federal-provincial agreements aimed at encouraging industrial and economic activity across Canada. These federal-provincial agreements (GDAs, and now ERDAs) enable both levels of government to plan and deliver development initiatives.

Arrangements Prior to 1982

DREE's Regional Industrial Incentives Act (RDIA) constituted the first major comprehensive federal regional incentives program. It established a two-part grant structure, one for capital costs and the other according to the number of jobs created. At the time that the program was introduced, the regions which were designated under RDIA included all the Atlantic provinces, eastern and northern Quebec, parts of northern Ontario and essentially the northern-most regions of the western provinces. All in all, the regions designated accounted for about 30 percent of the Canadian population and the average per capita income within them was approximately 70 percent of the national average. Maximum levels for both capital costs and number of jobs created were more generous for the Atlantic provinces than for other designated regions (Savoie, 1986:Ch 3).

Clearly, DREE's early efforts were earmarked for the slow-growth regions of eastern Quebec and Atlantic Canada. DREE's other program, the special areas agreement, was also targeted for these regions. Jean Marchand, DREE's first minister, summed up the government's position when he declared that "80 percent of his department's expenditures should be spent east of Trois-Rivières" (Savoie, 1986:Ch 3). Only "modest" and "controlled" expenditures, he argued, should be directed to other slow-growth regions. It was not long, however, before strong political pressure was exerted to extend DREE programming to other regions. By 1972, for example, Montreal was designated as eligible for regional incentives. Later, other regions were also designated, so that by the time DREE was disbanded, the program covered over 50 percent of the population and 93 percent of Canada's land mass (Savoie, 1986:Ch 3).

The RDIA approach had three basic flaws. First, the pressure to apply it to more and more areas threatened to make it impotent. Second, there was considerable political fallout when grants were extended to rich multinationals, and even more fallout if it was thought that the grants simply encouraged the relocation of existing plants from central Canada. Finally, the pace and effectiveness of RDIA in alleviating regional disparities was entirely dependent upon investment decisions of the private sector. The need for more regular and less politically sensitive programs led to the emergence of the General Development Agreements (GDAs). GDAs allowed for a broader, less politically sensitive approach to development that could be applied universally across the country. More important, perhaps, every region now became eligible for regional development funding.

Initially, the bulk of program expenditures, both RDIA and GDA, was earmarked for Atlantic Canada and Quebec. Over the years, however, the pattern shifted westward. In the early years, DREE was spending 51 percent of its budget in Atlantic Canada, 12 percent in Quebec, nine percent in Ontario, and 24 percent in the western provinces. By 1973-74, the pattern was such that DREE was spending about 38 percent of its resources in Atlantic Canada, 39 percent in Quebec, 14 percent in the western provinces, and three percent in Ontario. By 1981-82, the pattern had shifted once again with DREE spending 29.7 percent of its budget in Atlantic Canada, 29.7 percent in Quebec, 7.9 percent in Ontario, and 32.8 percent in the western provinces (Lumley, 1983). It is important to note, however, that an important part of DREE's budget for the West consisted of the Prairie Farm Rehabilitation Program (PFRA). This program predates the GDA approach and the establishment of DREE. One can speculate that, in part, the GDA concept was an outcome of pressure to spread DREE programming across the country.

Arrangements Post-1982

Dissatisfaction with both the economic outcomes and the delivery mechanisms, when combined with an evolutionary shift in economic development theory, led to significant changes in the federal approach to regional development in January 1982. The institutional arrangements, notably the reliance upon a single department charged with the responsibility for regional development, had fostered considerable interdepartmental tensions. The role of sectoral departments in furthering regional development was often both unclear and uncoordinated. A central thrust of the 1982 reforms was directed at increasing the participation of sectoral departments; another was to increase the visibility of federal actions in regional development.

In 1982 DREE was disbanded and its unallocated budget put into a regional fund, which all departments were invited to use in the implementation of regional development schemes. Funds freed-up from expiring GDAs were to go into the regional fund as well. In one stroke, the government removed the irritants arising from a single department being responsible for implementing regional development policy, and provided for greater visibility by having federal sectoral departments deliver their own programs directly to the recipients. A further change in the programs for channelling these funds buttressed these efforts.

Since 1982, the GDAs have given way to Economic and Regional Development Agreements (ERDAs). There are similar to the GDAs in a number of ways: like the GDAs, they are enabling documents in that they do not provide for specific projects; they simply clear the way for the two levels of government to bring forward specific programs and initiatives; and they offer a broad statement of goals, outline priority areas, and describe how decisions are to be taken. ERDAs also encourage the direct participation of such line departments as agriculture, energy, transport, and so forth. One difference, which now may well hold considerably less priority as a result of the change of government in Ottawa, is that the federal government is to deliver directly certain projects which under the GDAs were delivered by provincial governments.

Just as the GDAs have given way to ERDAs, so too has the RDIA been modified and renamed the Industrial and Regional Development Program (IRDP). This program now applies to all of Canada. Ed Lumley, minister of DRIE at the time the program was announced, declared that "This is not a program available only in certain designated regions. Whatever riding any Member of the House represents, his or her constituents will be eligible for assistance" (Lumley, 1983). Thus the program is national in scope, although the word "regional" is still given some prominence. The program has four tiers of need, with the first tier having the most developed 50 percent of the population and the fourth tier having five percent of the population living in areas of greatest need. The program is designed to be more generous for tier four than tier three, and for tier three than tier two, and so on. Some important restrictions were recently introduced to the program so that modernization and expansion project are no longer eligible under tier one.

Before drawing any conclusions from these changes to the instruments of regional development policy, we will look at assessments which have been made concerning their degree of success.

Assessment

Even a cursory look at the variety of initiatives sponsored under the GDAs and ERDAs confirms their flexibility; the kind and variety of initiatives sponsored is remarkable. For example, in Newfoundland, projects have been launched in support of the rural, agricultural, forestry, community, and tourism sectors, to name just a few. In Quebec, there has been support for industrial development, forestry, highway construction, and so on. In British Columbia, there have been projects in support of access road construction and the development of the tourist and forestry industries. The list goes on for these provinces, as for the others.

Though desirable from several points of view, flexibility does not in itself offer a theoretical framework by which to define regional development, or even a yardstick with which to assess possible new initiatives. In fact, considering the host of initiatives that flexibility can give rise to, one may wonder if they all should qualify under the regional development banner. Subsidiary agreements under GDAs, for instance, sponsored such diverse initiatives as a marina for pleasure boats owners, a water treatment plant for Montreal, construction of a club house for a golf course, school construction, and numerous highway construction projects. This should not overshadow the point that important and certainly worthwhile regional development projects were launched under GDAs. It remains, however, that GDAs were found all over the map, not only in terms of geography, but also in the type of initiatives sponsored.

It also remains that both the IRDP and the ERDAs are expensive. When grouped together, federal government spending on these programs amounts to over $1 billion annually. Administrative or overhead costs to administer these programs amount to another $230 million (Canada, 1984). When asked why so many varied initiatives were sponsored under the GDAs, a former senior evaluation officer of DREE commented "it is simply a question of too much funds chasing too few good projects." Although few evaluation studies exist on GDA or ERDA spending, most that have been undertaken conclude that either more time is required before the full impact of the initiatives can be assessed, or that it is impossible to evaluate fully GDA spending. The argument here is that GDA initiatives can only have a limited impact on a provincial or regional economy. Other more important factors, such as interest rates, the strength of the U.S. dollar, and so on, inevitably come into play (Savoie, 1981). Evaluation of GDA (and now ERDA) spending is also made difficult by the imprecise nature of the goals and objectives of their subsidiary agreements. For example, a subsidiary agreement with the Ontario government for the Cornwall area had as its objectives "to create a long-term expansion in employment and income opportunities in the Cornwall area . . . ." When does one evaluate such an agreement, given its long-term outlook? How does one isolate the agreement's contribution to the long-term expansion of the Cornwall area? There are numerous other examples, all of which suggest that rigorous and clear cut evaluation of GDA and ERDA activities are difficult if not impossible.

Regional industrial programming provides greater opportunities for evaluation. This may well explain why several comprehensive studies have been prepared on the RDIA incentives program both by government agencies and independent scholars even though substantially less public funds were committed to them than to GDAs and ERDAs. Certainly GDA and ERDA spending has not attracted anywhere near the level of interest among scholars, as compared to regional incentives.

Evaluations of the regional incentives program have led to a variety of conclusions, by and large unfavourable. The Economic Council of Canada was, however, somewhat positive. It found that the incrementality of projects under RDIA was between 25 and 59 percent, and that of jobs between 35 and 68 percent. The lower rates of 25 and 35 percent represent, according to the Council, a conservative estimate of DREE's success. An investment project is considered incremental if the firm, without assistance, would not have undertaken the project or would have undertaken it outside the designated region. On the whole, the Council found the program to be of some benefit and concluded that "the subsidies ... seem successful enough to be a paying proposition" (Economic Council of Canada, 1977). David Springate (1972) found that regional incentives grants had relatively little influence on the investment decisions of large firms. He concluded that the grants produced few changes with respect to timing, size, or technology of the project. Yet another evaluation carried out by Carleton Dudley (1974) suggested that the incentives grants were not sufficiently generous to offset the added operating cost of locating in slow-growth regions. He estimated the potential of grants for reducing the operating cost of a firm to be between one and five percent of sales, substantially less than the added cost of operating in designated regions, estimated to be between five and 20 percent.

Some studies have attempted to identify various characteristics associated with the type and degree of incrementality. According to J.P. Legoff (1977), incrementality tended to be higher when the projects involved small, new products; when equipment had been modernized; when an element of high risk, and high profitability, existed; and when foreign competition was high. Incrementality tended to be lower: for larger projects undertaken by firms that had experience with similar projects in the past; for projects that were necessary for the normal continuation of a firm's operations; and for showing a high profit/investment ratio. It is recognized, however, that incrementality is an issue on which there is little agreement on the part of the various researchers who have studied it. The lack of consensus may well stem from the fact that it is very difficult to measure incrementality with any degree of reliability. Dan Usher (1978:286) explained the difficulty by pointing out that: "normally one is taxed or subsidized for doing something regardless of whether one would do it or not in the absence of the tax or subsidy. It is as though the family allowances were restricted to children who would have been conceived, in its absence, or Crows Nest Pass rates restricted to grain that would not have been grown if freight rates were higher."

Others have suggested that the RDIA program had a built-in capital bias which ran counter to the program's objective of job creation. The RDIA grant, it was pointed out, lowered the cost of capital by a greater percentage than it lowered the costs of labour. Firms were encouraged, in other words, to place emphasis on new plants and new equipment, rather than on creating more employment. On the basis of his analysis of the program, R. Woodward (1975) concluded that "DREE failed to achieve the greatest number of new jobs, and incurs a higher cost per new job created, by continuing with the subsidies which are inconsistent with their goals."

DREE was never very helpful in evaluating the impact of its regional incentives program. The department did produce some periodic reports of RDIA, but they were not successful in addressing the criticism voiced by Woodward and Springate, among others. N.H. Lithwick (1982:134) explained "... the brunt of the attack (on DREE) in the early period was on the whole concept of capital subsidies under RDIA – an attack that was not deflected by often confusing and irrelevant statistics produced by DREE." Insufficient time has elapsed to evaluate the Industrial and Regional Development Program (IRDP). But there is no reason to believe that things are better with IRDP than they were under RDIA. The fact remains that no researcher has ever been able to state clearly the full impact of regional incentives either on slow-growth regions or on the location intentions of firms, even those that did receive a grant. About all that can be said is that things could have been worse for slow-growth regions if no regional incentives had been available. But this we know intuitively, and from the observations of federal officials who have been involved in regional development programming over the years, rather than from "hard" evidence.

Redirecting Regional Efforts

A number of interrelated issues can be clearly discerned from these observations. First, there is a strong tendency, almost cyclical in nature, to move away from a focus on regional development towards one geared to national economic development. Mainline economic theory and political pressure inevitability operate in such a manner as to force a progression in targeted programs towards universal application. This tendency towards universality has been helped along by the second factor, namely, that for a variety of reasons, there have been diminished opportunities to employ direct grants to influence the location of new industries. Instead, many direct grants have been for modernization and the preservation of jobs rather than for influencing the location of new employment opportunities. Clearly, neither RDIA nor IRDP have provided sufficient opportunity for the federal government to assist, or to be seen to be assisting, depressed regions, given the way in which they have been applied.

A third factor was the shift, in the 1970s, of the theoretical underpinnings for regional development policy from the growth pole concept to that of maximizing the comparative advantage of a region. This shift has reinforced the trend away from designated regions and towards the universal application of regional development funds. After all, every province or region had some comparative advantage to be exploited. Similarly, by this time, organizational structures and analysis cast in terms of annual provincial outlooks insured that the interpretation of the appropriate region for assessing this "comparative advantage" was a province.

All of the above serves to demonstrate the difficulties of sustaining a committed regional development effort focussed on certain regions of the country to the exclusion of others. It also suggests that regional development policy is in need of a reassessment and that, in such a reassessment, some difficult questions need to be addressed. Ought our limited resources, for example, be focussed on those regions in greatest need, rather than universally applied? If the answer to this is yes, then a subsequent question is whether such action is politically and administratively feasible? If it should prove to be desirable and possible to focus resources in this manner, how might these be applied to increase employment opportunities in these selected regions? Any approach must take into account the recent events surrounding the intercity and interprovincial competition for proposed automotive plants; of particular note was the degree of provincial and local hostility towards direct federal intervention in determining the location of these plants.

The conclusions of the Macdonald Commission were based in large part on the conflict between regional and national policy. The Commission (1985:vol 3, 215) noted:

> The federal government has been unable to form a satisfactory link between its regional development responsibilities and its broader role in managing our economy. The most obvious manifestation of this failure is apparent in the constant rearrangement of the federal bureaucracy, first, to bring regional interests in a single department, then to encourage all departments to consider regional implications, and finally, to drift back to a single-ministry concept. We are thus faced with three questions: What is the appropriate division of labour between the federal and provincial governments? How should the Government of Canada balance its regional economic with its national responsibilities? What policies and programs should be pursued?"

The policy approach suggested by the Macdonald Commission would diminish "universality" by redirecting federal funds for regional development only to those provinces in receipt of equalization payments. Arrangements under ERDA, however, would continue to serve as a mechanism to ensure greater sensitivity of federal line departments to provincial priorities.

Whether this latter step should be viewed as a regional focus to national economic development efforts or as the national application of funds previously allocated for regional development is a moot point. Aside from redistributing funds to the "have not" provinces, the Macdonald Commission suggests that the federal role be limited to equalizing the productivity of labour across regions. This could be done by helping to accelerate the adoption of technology in certain regions, providing retraining for an inadequate labour force, and reducing structural problems in the labour market by establishing labour centres. Under any circumstance, direct federal involvement by way of incentives to influence the location of industries would be ruled out.

What the Macdonald Commission fails to provide are concrete suggestions for what the provinces might do with the monies they would receive from the federal government so as to create employment. The Commission does note, however, that before receiving such funds, provinces would have to agree to a "Code of Conduct" which would set down some constraints and rules for fair play in the area of economic development.

In our view a new mix of federal initiatives should be designed and implemented; a federal role beyond that of merely passing money on to the provinces according to some formula is an absolute necessity. Programmed commitment towards goals is preferable to a flat payment, which may quickly be interpreted as absolving the federal government of any responsibility for the outcome. It would be folly to ignore the investments in infrastructure that have been realized through the GDAs. Slow-growth regions now have the necessary infrastructure to accommodate new economic activity. It is important that the infrastructure be utilized through new economic activity so that local communities and, in some instances, provincial governments are able to support and maintain their newly acquired infrastructure facilities.

The future direction of regional development policy must take into account new realities facing the country. While new industrial plants are still coming on stream, it is clear that influencing the location of manufacturing industries has not and will not provide the avenue for employment growth in the less developed regions, as was foreseen when the regional development programs were first conceived. Not only does Canada have a current surplus of manufacturing capacity waiting to come back into production, but to expect rapid expansion of investment in this sector would be unreasonable. Since the opportunities to influence "offshore" investors are limited, then it is necessary to examine other avenues. The most logical place to begin looking is at the local level, either through the encouragement of investment from persons or companies already proven successful in the affected regions, or through the development of new entrepreneurial talent. The first approach is one advocated recently by the then Minister of Supply and Services, Stuart McInnes. He suggested that already wealthy east coast families be encouraged to invest more money in the Atlantic region. His preferred option would be to "temporarily turn the entire Atlantic region into a tax haven .... We want to offer tax incentives and other education schemes, ... to try and compel natives who know the potential to invest in their own land."[3]

The second approach focusses more on creating conditions which would encourage new entrepreneurs to emerge from these local areas. It is a second approach because the task is not so much to encourage them to invest their capital in their area, but rather to gain access to the capital in the first instance. Tax havens may assist those with funds, but may not provide much assistance to those persons who wish to start their own business concerns. Other instruments which assist in the accumulation of, and access to, small amounts of capital are of greater importance.

If future efforts are to concentrate upon local entrepreneurs rather than upon attempting to divert economic activity from one region to another, then different tools are required. One possibility, among others, would be to permit local entrepreneurs to gather capital for investment purposes free of tax. A scheme modeled on the Registered Retirement Savings Plan would allow residents of slow-growth regions to put aside capital, provided that at some point they invest it in businesses in slow-growth regions (Savoie, 1986:Ch 9). Cash grants to local entrepreneurs in slow-growth regions may still offer important advantages, in that people in these regions frequently lack capital to a greater extent than do those in the more developed areas of the country. The federal government, however, should look to the provinces to deliver these grants.

Ottawa's commitment to reduce its expenditure budget may well prompt some fundamental questions about its regional development policy objective, and about the ERDAs. Simply stated, what is Ottawa trying to do with its billion dollar a year regional development fund? With the introduction of the GDAs and ERDAs, it now appears that regional development simply means economic development at the provincial level. Contrary to Jean Marchand's firm policy position that the central purpose of the program was to promote economic development in eastern

Quebec and the Atlantic region, Ottawa's efforts are now spread out all over the country. It is worth noting, for example, that in 1981-82 Ottawa spent nearly as much for subsidiary agreements in Ontario as it did in Newfoundland.

Much like the debate over universality of social programs, questions should be asked as to whether the federal government should restrict its role in regional development to specific areas of the country. Some of Ottawa's regional development budget has been in support of provincial programs delivered by the governments of Ontario, Alberta, Saskatchewan, and British Columbia. Relatively speaking, the fiscal position of these provinces is strong and one is left questioning the rationale for Ottawa's contribution. If it is apparent that new initiatives are economically desirable, and that they fall clearly in the provincial field of responsibility, then these provinces ought to be able to support them financially.

With respect to the other provinces, Ottawa should also ask some fundamental questions before agreeing to finance new proposed subsidiary agreements. What is it that Ottawa hopes to accomplish in say, New Brunswick, Newfoundland, and Nova Scotia? Is it simply to transfer funds for provincial governments to launch a series of "B" budget items for as many of their economic departments as possible? Is it, as some ERDAs suggest, to raise per capita income levels to national levels? If so, are these objectives realistic?

The federal government does not need a new set of regional development instruments. What is required is a realistic set of objectives, and a resolve to limit its regional development program to strategic and selective development interventions, in the sense of most effectively marshalling the limited resources available for regional development in order to strengthen the economic structures of lagging regions. In short, ERDAs and federal regional development programming should go beyond simply filling gaps.

At the same time, the federal government should not promote the notion that Canada can have a "no-cost" regional development policy, although it may be convenient for promoters of regional development to argue that regional development is simply economic development at the regional level. It remains, however, that elected officials in particular have a strong sense of responsibility towards slow-growth regions, and they will continue to ask for measures to promote development in these regions. There will invariably be some inefficiency in resource allocation and we cannot expect all measures to reap the kind of benefits at first envisaged.

After more than twenty years of regional development programming, there is at least one lesson that we have learned. Regional development will occur neither rapidly nor easily; regional disparities will not be alleviated tomorrow or the next day. That being said, it is important that the lesson we have learned result not in defeatism, but rather in pragmatism. Patience, not disavowal, is what regional policy needs most at the moment.

Recent initiatives by the federal government suggest that pragmatism and patience may well be the order of the day and that regional development may in the future be restricted to specific areas rather than spread out across the country. In recent months, Ottawa unveiled the Atlantic Enterprise Program, a loan guarantee and interest buy down program, which applies only to Atlantic Canada and eastern Quebec. In addition, an Atlantic Opportunities Program restricted to the same area was also introduced. This program is designed to increase public sector purchasing in Atlantic Canada. Moreover, the federal government announced in its recent Speech from the Throne (September, 1986) the establishment of a new Atlantic Canada Opportunities Agency. These initiatives could well constitute the first steps back towards restricting the universality of regional development programs.

Footnotes

1. Statement by the Honourable Brian Mulroney at Halifax, Nova Scotia, 2 August 1984.

2. See *New Management Initiatives*, the initial results from the Ministerial Task Force on Program Review, Department of Finance, May 1985.

3. *Globe and Mail*, 6 September 1985, p. 4.

References

Atlantic Provinces Economic Council, 1985. "The Federal Budget: Some Implications for Atlantic Canada". Seminar, St. John's, Newfoundland, June, 1985.

Canada, 1982. *The Canadian Constitution 1982: A Resolution Adopted by the Parliament of Canada, December 1982.* Publications Canada.

Canada, 1984. *Estimates for the Fiscal Year Ending 31 March 1985.* Ottawa: Minister of Supply and Services.

Courchene, T.J., 1981. "A Market Perspective on Regional Disparities", *Canadian Public Policy*, 7,4:506-517.

Department of Finance, 1985. *The Fiscal Plan.* Ottawa: Department of Finance.

Dudley, Carleton, 1974. "Summary of a Theoretical Financial Analysis of the Long-Term Subsidy Value of the Regional Development Incentives Program in Canada, 1969-1972". Ottawa: University of Ottawa, Department of Geography.

Economic Council of Canada, 1977. *Living Together: A Study of Regional Disparities.* Ottawa: Minister of Supply and Services.

LeGoff, J.P., 1977. "Les subventions à l'investissement: leur potentiel de relocalisation", *Actualité économique.*

Lithwick, N.H., 1982. "Regional Policy: The Embodiment of Contradictions". In G.B. Doern (ed.), *How Ottawa Spends Your Tax Dollars - 1982.* Toronto: James Lorimer and Co.

Lumley, Ed, 1983. "Speaking Notes to the House of Commons: on the Industrial and Regional Development Program". Ottawa: Department of Regional Industrial Expansion.

Royal Commission on the Economic Union and Development Prospects for Canada, 1985. *Report.* Ottawa: Minister of Supply and Services.

Savoie, Donald J., 1981. *Federal-Provincial Collaboration: The Canada-New Brunswick General Development Agreement.* Montréal: McGill-Queen's University Press.

______________, 1986. *Regional Economic Development: Canada's Search for Solutions.* Toronto: University of Toronto Press.

Springate, David, 1972. *The Effect of the Canadian Government's Attempt to Influence the Investment Decisions of Private Businessmen by means of the Regional Development Incentives Act.* Ph.D. thesis, Harvard University.

Usher, Dan, 1978. "Some Questions About the Regional Development Incentives Act". In N.H. Lithwick (ed.), *Regional Economic Policy: The Canadian Experience.* Toronto: McGraw-Hill Ryerson.

Wilson, Michael H., 1984. *A New Direction for Canada: An Agenda for Economic Renewal.* Ottawa: Department of Finance.

______________, 1985. *The Budget Speech.* Delivered in the House of Commons.

Woodward, R., 1975. "The Effectiveness of DREE's New Location Subsidies", *Canadian Public Policy,* 1,2:217-30.

Chapter 14:

The Efficiency-Equity Tradeoff: The Macdonald Report and Regional Development

---

James D. McNiven

Introduction

During the past two decades, the idea that a positive attempt could be made to alleviate regional disparities in Canada has been the subject of much controversy. Economists have been concerned that such a policy would represent a diminution of efforts to keep Canada competitive in the world economy, while politicians have worried that the financial obligations incurred might be far greater than the results obtained. That the controversy is far from being settled can be seen in the Report of the Royal Commission on the Economic Union and Development Prospects for Canada, otherwise known as the Macdonald Report.

The Regional Policy Muddle

The body of the Report is some 1700 pages long and its quality reflects this length. Some parts are almost embarrassing in their naiveté, while others are daring and astute. The Report tries to maintain a consistency of vision but, in the end, the Commissioners had to settle simply for a set of recommendations that is maintained throughout the Report – a feat in itself that is not to be taken lightly, given the immense range of the Commission's terms of reference. Indeed, the Report notes, "We have ... discovered a considerable degree of disciplinary isolation. Economists, political scientists and lawyers working with this Commission were happy to try to work together, but it became obvious at an early stage of our project that they had little experience in doing so. This situation left Commissioners and staff with significant problems in trying to devise an integrated approach to the materials available" (II, 755).[1] One of the topics where this isolation has led to mixed signals that strain the integration of the Report is in the way regional development policy is treated.

In broad outline, the Report may be broken down into four parts: the international context; the economic policy; social policy; and the polity, or political arrangements. In the economic policy part of the Report, found primarily in Volume II, industrial policy is discussed at some length. A component of industrial policy is said to be regional policy. However, except for a short review of what other countries have done with regional policy, any discussion is put off until the political part of the Report. And for good reason, as the economic part is relentless in its vision of a unified Canadian economy, one that is amenable to the theoretical assumptions of its researchers and/or authors. The operative term is "economic efficiency" in this part of the Report.

In the political part, which includes most of Volume III, the concern is with the sharing of the economic pie between provinces and regions. The social policy part is concerned with sharing among individuals. Regional policy is admitted to be a part of industrial policy in Volume II, but it is then quickly tossed into the "sharing", or equity grab-bag, and sent over to the political scientists to handle, probably because, as the Report puts it, "Our canvass of the research community revealed that relatively little is known about how and why regional economies grow. Many theories abound, but none has gained wide acceptance" (III, 198).

There is a good deal of tension between these two parts of the Report, even if the recommendations are consistently maintained. To the Commission's credit, it recognized that this is not a world made for tidy minds. "There is typically, but not always, a fundamental conflict between the goals of regional economic development and those of national efficiency. The location of economic activity is normally not neutral" (III, 217). The economic part of the Report is ideological, if one recognizes the term to mean a system of thought that is internally consistent and based upon a limited set of assumptions. The political part is, in contrast, a very pragmatic piece of work and one which in many ways contradicts the economic part. The economic part assumes a national economy in competition with other national economies. The political part says "The first lesson to be learned from these data is the striking importance of the local provincial market. Nearly two-thirds of everything produced in Canada in 1979 was first sold in the province in which it was produced" (III, 103). In the end, a pragmatic solution is offered: Canada must pursue economic efficiency as a national goal, while allowing the provinces to pursue what the Report calls "place prosperity". The "comparative advantage" referred to in Volumes I and II, however, is so distorted by the notion of engineered comparative advantage (I, 152), and the difficulty in establishing a definition for competitiveness is so obvious (II, 187-197), that it is hard to reassure oneself that the Commission's national prescriptions are based upon anything more than a leap of faith.

Assigning place prosperity as a provincial concern allows the Commission to ignore the ideological discomfort caused by applying mainstream economic analysis to the problem of promoting Canadian prosperity. The Commission notes that markets, and by allusion, the economics of markets, are hostile to national boundaries (I, 42) and favour size and scale (I, 245). In effect, one argument is used in the Report to promote place prosperity for Canada as a whole, while studiously avoiding the term; and another is used to permit a different type of place prosperity policy for, say, Ontario or Nova Scotia. Given that the Canadian segment of the world economy ranks with that of California or New York in size, a logical conclusion could be drawn from the Report's major theoretical underpinnings that the Canadian economy ought not to exist as a separate entity at all.

In an exercise that attempts to square the circle, the Report recommends a kind of functional distribution of responsibility between the federal and provincial governments in the area of economic policy. The federal government should focus upon the need to provide for overall national competitiveness, and its forays into the area of the distribution of wealth should focus upon individuals and upon equalizing public services, in order that labour and capital will be able to move efficiently from one end of the country to another as they are needed. The provincial governments should concentrate on alleviating the effects of these changes so as to protect community structures and should use federal transfers so as to improve the utility of social and educational services. The fact that there might be overlaps and competition amongst the provinces and the federal government does not faze the Commission. "Indeed, economic development in federations is likely to exceed that in centralized states as a result of the beneficial effects of competition in the public sector" (III, 148).

At least three reasons lie behind the Commission's advocacy of provincial governments assuming the predominant role in regional development in the future, over and above that of untangling the theoretical problems discussed above. First, the Commission notes the strides taken by provinces in improving their administrative competence in the past two decades. Because of this province-building, there is little reason to worry that the provinces would be incapable of managing local economic development programs. Where some provinces might lack the resources to carry out effective development, the federal government should be ready to step in and assist. The Commissioners recommend that the ERDA process be used for this purpose, and that regional development funds be added to equalization grants.

The second reason for this change is that "the federal government has been unable to form a satisfactory link between its regional development responsibilities and its broader role in managing our national economy" (III, 215). Federal failure, combined with province-building suggests that a shift in responsibility would make sense. It would, one hopes, get the national government out of the business of being pressured to bail out firms in all parts of the country. The federal government could act to limit provincial activism (which might affect its international relations) by devising an accord that would allow for national (i.e., all levels) adherence to treaties. Provincial concerns could be made more vocal in Ottawa through an elected Senate. Two other mechanisms that could be used to stabilize the federal-provincial situation are the Council of Ministers of Economic Development, which would include a Federal-Provincial Commission on the Economic Union, and a formal Code of Economic Conduct. All of these, it is suggested, would work to regularize economic policy at both levels and to cut down on abuses and economic distortions.

Finally, the Commission advocates a new approach to the idea of regional disparities by suggesting that the measurement of per capita income disparities no longer be used. Its argument is that the development of transfer programs to individuals has progressed to such an extent that income differences between provinces are now less exaggerated than are income differences between people in the same province (III, 215-216). The Commission also recognizes that, on an earned income basis (which is a useful way of looking at regional development disparities), federal programs over the past twenty-five years have probably just kept the status-quo intact. This being the case, "We Commissioners would not go so far as to label Canada's continuing regional economic disparity a crisis. We do, however, view it as a serious problem. The nature of individual Canadians' future economic prospects should not depend so significantly on their province or place of birth. Regional development must therefore remain one of Canada's primary policy goals" (III, 215). Maybe so, but a count of the nearly 1700 pages of the body of the Report finds about 25 devoted to a discussion of this primary policy goal.

To sum up in a concise fashion, the Report seems to say that regional development is a vexatious problems about which we know little. It does not seem to want to go away, though it has been masked to an extent by Canada's growing transfer system. The Commissioners want to leave it for the provinces to solve, while they concern themselves with the more tractable elements of Canadian industrial policy – in particular, the question of trade liberalization. In less polite circles, this would be called a cop-out; however, it is interesting to speculate what the implications of this approach to regional development might be.

Implications

In the short run, it is hard to see many benefits arising out of this approach for those provinces and regions that suffer from disparity. In spite of all the media attention given to economic questions, it is dubious that the expenditures of government at any level have moved over the past five years to favour economic development over social needs. Voters vote as consumers, not as producers, and this tendency means that public expenditures will continue to be biased away from development. Lest this sound too harsh, it should be remembered that the overall distribution of income in Canada has hardly changed since the rise of the welfare state; so what is really being discussed is not the tradeoff between the poor and the entrepreneur or the multinational corporation, but the way in which the middle-class voter sees himself or herself: as a consumer or a producer. These are the people who dominate the political scene and who derive the benefits from the taxes they pay.

It is accepted today that governments at all levels are facing long-term deficit problems that will constrain their abilities both to provide public services and to assist business. Clearly, services will be reduced only with difficulty, if at all, given voter preferences. Economic development expenditures will continue to suffer by comparison. It is not difficult to see how the market-oriented approach of the Commission could appeal to all levels of Canadian government, regardless of whether the evidence for it is solid in the Report or not. As the Commission says, "Democratic states and free markets need one another" (I, 43). So do states that can no longer find the money to intervene in the market place. Virtue and necessity come together quite nicely.

In practice, this withdrawal from intervention for the sake of regional development has already started. The first steps in this direction were taken by the previous federal government with the creation of the Industrial and Regional Development

Program (IRDP), which was touted as the all-encompassing replacement for a variety of economic development programs. On paper, the IRDP looked as generous as its predecessors, and considerably more flexible. In practice, it was not, in large part because the grant system, which had been on a fixed formula basis in the earlier system, was changed and tied to a set of maximum participation levels. Allegations were made by some provinces and corporations that the actual offers were being manipulated for political purposes. It was possible, for instance, for a Nova Scotian firm to be offered a greater proportion of the maximum for locating a new facility in a Tier II area of Ontario than the proportion it could get in a poorer Tier III area in Nova Scotia. Varying the proportions of the maxima offered in these two areas could make the offers the same in terms of dollars. Regardless of the political shenanigans, the end result of the IRDP, in terms of money spent in a province such as Nova Scotia, was to cut it in half in the first eighteen months of its existence. The new federal government is now working out a plan to "devolve" a large proportion of the IRDP activity to the individual provinces, partially in an attempt to cut administrative costs and bureaucratic overlap. Given the existing and future cuts that were announced for DRIE in the spring of 1985, however, it is doubtful that the real levels of expenditure made by the federal government as late as 1981 will ever be restored, either through direct expenditure or through the ERDA process.

In any case, the Commission is not terribly enamoured with the grant approach, be it IRDP or any other variation (III, 207-213). It prefers instead, like the new federal government, some kind of tax incentives (II, 260). This is a good sentiment in that it tends to reward success rather than failure, and it is less likely to involve a large bureaucracy to administer the incentives. In practice, however, the tax route would violate one, if not the strongest, of the taboos of tax administration in Canada, that of making a tax incentive geographically specific. Experience in promoting free-trade zones, and special tax regimes for Cape Breton Island has underlined the great reluctance of the federal Department of Finance to accept any meaningful regional development tax incentives. Developing a grant system to assist poorer regions may be theoretically distasteful, but the theoreticians do not have to face the finance bureaucrats behind their barricades.

Although the Commission suggests that more funds should be made available to provinces that need them in order to effectively take up the regional development role, it is clear that there are none available. Further, there is little hope that a truly effective tax-based system will be used in order to encourage activity that is both regionally specific and market-based, another of the Commission's hopes. What is likely to be done, however, is to pass over the responsibility for "place prosperity" to the provinces, in fact if not in rhetoric.

These harsh realities of present-day Canadian public finance are not likely to find the Commissioners too sympathetic. Their basic approach comes from a different direction, which may be fairly deduced from the following quotes: "Free trade is the main instrument in this Commission's approach to industrial policy" (I, 60). "[R]egionally differentiated tax and expenditure programs can retard overall economic growth and distort the pattern of development" (II, 259). "[A]n intervention should be considered only if it is likely to improve the allocation of resources and, hence, real growth . . . [intervention for] a non-economic objective should be achieved at the least cost" (II, 259). "[R]egional development policy should focus as much as possible on improving the productive capacity of poorer regions" (III, 214).

None of this is really new, except the implication that somehow a laissez-faire approach by both levels of government, coupled with a free-trade agreement, will bring the regions to their proper levels in the production side of the economic equation. The consumption side will be looked after by the system of transfers to persons already in place. Somewhere in this is an assumption that free trade will accomplish some kind of dispersion of economic activity across the country, or, barring this eventuality, that the adjustment processes (read: migration) will take care of the problem (I, 331). At this point, the reader will be excused if he or she is exercising a degree of confusion. Regional disparity seems to have sunk without a trace, in spite of it being a "serious problem".

Let us resurrect it at the provincial level, so as to explore other implications of the logic of the Macdonald Report. From the perspective of practical politics, it is hard to see how elected MPs and Senators could resist the appeals of constituents for assistance and refer them to the appropriate provincial authorities. Volume II comes close to suggesting this, but Volume III does not, being the more pragmatic volume. Volume I simply says that the Royal Commission must step back from the pressure cooker of the political system and take a more detached view (I, 24). In effect, the Report calls for a redress of the overly interventionist system we have today by moving closer to the market end of the spectrum. Yet this obviously does not mean that all or even most intervention need be forsaken. This is very confusing.

The Report tries to set down some criteria for intervention. In Volume II, four criteria are laid down: the intervention must improve the allocation of resources; non-economic objectives must be met at the least cost; the burden of proof that the intervention is better than the market solution must rest with the proposer; and the mechanism used should be tax-based, if possible (II, 259-260). Volume III states only that the federal government should emphasize regional productivity and labour market problems, while the provinces should be concerned with "community preservation" (III, 218-220).

An interesting point about these criteria is not whether they are practical, or even what terms such as "improve the allocation of resources" imply, but the notion that intervention should be reactive rather than a part of overall policy. The Commission is not only reflecting its market-based orientation, but it recognizes that "Much of the policy output of the state is driven by internal government dynamics and is coloured by political and bureaucratic purposes which the citizens may not share" (I, 39). In effect, the Commissioners seem to feel that they must try to return Canadian economic policy back to the people and to take it out of technocratic hands by reaffirming the primacy of the marketplace. This is a noble objective and is a repudiation of the approach of the federal government during the past twenty years. Whether it is in the interests of the less-developed regions must be considered very carefully.

The inclusion of a notion of community preservation in the Report is significant. Those who have had to deal with the problems of out-migration at first hand are well aware that the problem with migration policies does not lie with the migrant so much as with the structure of the community left behind. It is easy to talk in the abstract of mobility and to recognize the loss to migrants in terms of housing and psychological rewards. It is also easy to forget that while we may be able to retrain a Nova Scotian woodsman to be an Albertan roughneck, it is not possible to train his brother, who stayed at home, to take the place of the local dentist who also moved West. At least, it cannot be done in a six-month Manpower course. It is the employed and the employable who are the most mobile, not the hard-core unemployed. Whether it be in Sweden, France, Canada or Mexico, the same situations keep reappearing—and keep being ignored by the theorists who find them inconvenient. Furthermore, it is hard to see how the federal government could abdicate responsibility for community structure problems since they are, in the end, an interprovincial matter. On second thought, perhaps it can, if one wishes to trace some of the present problems with our banking system to the collapse of Pioneer Trust in Saskatchewan, which foundered over a number of bad mortgages in Calgary and Edmonton, due in part to people abandoning their investments in these economically hard-hit cities and migrating to the east and west coasts. There is much more to the technical term "labour adjustment policy" than meets the eye.

The possibility of the provinces assuming a greater role in the regional development process remains. Traditionally, the Canadian provinces have been more activist in the economic development process than have the American states. These states have also existed in a far more open market milieu than have the provinces, one that resembles to a degree that which the Macdonald Commission would have created in Canada. The states have also benefitted from a tax-based industrial bond system, unlike our granting approach. Today, the states are faced with the end of their industrial bond system and are aggressively moving toward the kind of project financing common in Canada. They are also aggressively pursuing trade and investment opportunities abroad, with some 38 states having offices overseas. Conversely, the Report shows some concern with the tendency for provinces to do likewise (I, 371), and appears to advocate provincial development approaches that resemble those being abandoned in the United States. Ironically, this more interventionist attitude of the states comes under the U.S. federal administration most committed to a reduction in the public role in the economy in the past few decades. We may be Americanizing just as the Americans are starting to Canadianize.

Conclusion: Towards a New Regional Development Policy

The Commission found it extremely difficult to cope with the idea of regional development, given the orientation of its researchers and staff. To a degree, this underscores the inability of Canadian academics to come to grips with the complex political economy that is Canada. The Report does, however, deal with the topic in the context of federalism; it recommends a number of changes that in general, will irritate most people concerned with the subject. These recommendations must be taken seriously, however. The respectability of regional development policy is in a sorry state at present and could do with some re-examination of its sacred cows.

Regional development is not dealt with in a consistent fashion in the Report, reflecting the tension between the relentless mainstream economic logic in Volume II and the flexibility of the federalists whose notions dominate Volume III. But, then, the Report accurately notes that the federal government has been consistently at odds with itself over how to deal with the regional problem. The Report advocates a form of federal withdrawal from regional development, and the transfer of more funds to the provinces to carry out policies and programs to overcome disparities locally.

There is the glimmering of a strategy that can be derived from the assignment of regional development responsibilities to the provinces. Much of the discussion of industrial strategy in Volume II is predicated upon the assumption that the Canadian economy is unitary, while Volume III asserts that it is not. A strategy based upon a unitary "government" and a unitary "economy" would probably work better at the provincial level, where things more closely approach unity, than at the federal level. One indication that this might be so lies in the relative ease with which provinces are able to formulate industrial strategies, compared to the inability of the federal government to do so. Nearly all the provinces have articulated strategies, such as those in the Nova Scotian and Albertan White Papers. Generally, these strategies include the elements that the Commission has identified as being critical to an industrial policy. To some degree, they are also quite different, which allows for a testing of different mixes and presumably could underscore the Commission's notion, mentioned above, that federations should be able to outperform unitary states. The friendly competition that exists between our provinces could be encouraged and used by the federal government to promote regional development and national growth at the same time. This would be superior to pretending that a unified national strategy could be devised and enforced by Ottawa upon the whole of Canada.

With respect to federal funding to help overcome regional disparities, the approach taken in the Report suffers from one major flaw. This is contained in the proposal for linking regional development grants to the equalization formula. Equalization as it is presently administrated, is a type of welfare program for the provinces. Its logic is simple: to equalize public services across the country through transfers of money, which decline as provincial fiscal disparity lessens and increase as it grows. If a recipient province manages to have an increase in its gross provincial product, as measured by a proxy of a number of fiscal and production indicators, then equalization payments are reduced. As in most individual welfare systems, a disincentive to get off the system is built in by provisions of this type. In spite of rhetoric and electoral pronouncements, there is little incentive for provincial politicians today to penalize their treasuries by some single-minded and effective development policy.

Provincialization of regional development policy makes sense in a federal state such as Canada, for it is the provincial governments that are most affected by the poor local performance. Any system of federal assistance, if it is not to be just another recurrent subsidy to provincial treasuries, must build in an incentive to focus upon development; it should not create a greater disincentive. An alternative to the Report's proposal might be a system based upon individual provinces' economic standing relative to a national average, with development bonuses paid to those provinces whose growth rates exceed these standings each year. The logic of this system works to reward those provinces which pursue economic development most effectively. The size of the bonuses would have to more than offset losses in equalization payments if they were to be effective. Under this system, it would be very important to Nova Scotia, which would likely be ranked seventh in the country on the basis of economic standing, to consistently outperform that ranking. Finishing eighth or tenth in growth over a period of years would penalize its treasury, while finishing second or fourth would provide bonuses.

Besides cutting regional policy expenditures free from a welfare approach, such a system would encourage recipient provinces to develop a more coherent goal orientation with regard to economic development. At present, the provision of consumer services by the provinces (e.g., health, education and welfare), and the quest for pseudo-nationalist symbols, take precedence over regional development, regardless of the rhetoric and media coverage given to this last policy item. Perhaps this is as it should be, but the provision of much of the funding for these services, and the standards set for their delivery, are to a great extent either federal in origin or based upon national or interprovincial consensus. These are largely out of the hands of politicians and administrators in the poorer provinces. Economic development, which is both a local problem and a relevant problem, receives little more than words in most cases. Applying the principles of competition and of rewards to the successful would bring the issue of regional disparity more to the fore than ever before. Something might actually get done besides just "staying in the race." As a side effect, regional development would be moved out the "equity" muddle it is now in and returned to the "efficiency" category, where it properly belongs.

Note

1. All references are to the volumes and pages of the Report, e.g. Volume II, page 755.

Regional Development: Some Thoughts Arising from a Review of Research Sponsored by the Institute for Research on Public Policy

---

Barry Lesser

The Regional Employment Opportunities Program, a research program on regional economic development issues sponsored by the Institute for Research on Public Policy, was born in 1980 from two primary considerations: as of the late 1970s, the federal government's commitment to regional development policy as an instrument for helping to redress regional economic disparities appeared to have weakened; and it seemed likely that the implications of this change would most dramatically affect the Atlantic provinces, still the most relatively disadvantaged of Canada's regions. Taken together, these considerations led to a research program with a focus on the Atlantic region as a way to help keep Atlantic regional development issues before the policy community.

In September 1985, the Institute officially ended the program. This phasing out of the program reflected Institute policy which required review and adjustment within a five-year cycle. As a result of this review, a decision was taken that while regional issues remained of sufficient importance that they should be actively pursued, they should not be confined to a single discrete program on regional economic development; rather they were to be integrated into all aspects of the Institute's research efforts.

The apparent weakening of the federal commitment to traditional regional development policy in the redress of regional economic disparities, one of the two perceptions which gave birth to the program, was a theme emphasized in the background documentation prepared by the REOP as part of a proposal for a study of Regions, Regionalism and Regional Development in Canada (Lesser/Poel, 1983). This apparent change in outlook [weakened commitment] appeared in the 1970s under the Trudeau government; and present evidence suggests the situation has been maintained, perhaps even intensified, in the first two years of the Mulroney government.

There are two fundamental definitional questions which underlie this trend: the question of "what is a region" and the question of "what is regional development".

Since the late 1970s, the federal government's definition of region appears to have become one of sub-provincial areas versus provincial or supra-provincial areas. This has meant a relative increase in "regional development dollars" flowing into Ontario and Quebec versus, for example, the Atlantic provinces, a major change from the 1960s when such measures as the Atlantic Development Board and the ARDA and FRED programs were introduced to fight regional disparities.

Problems in defining what constitutes regional development are not new; they involve a debate that goes back at least to the Gordon Royal Commission of the 1950s. The issue is whether regional policy should seek simply to subsidize income or seek to create a self-sustaining economic base in disadvantaged regions. Certainly only the latter can really be considered as development. The former, however, has been a dominant, if not primary, thrust of federal policy for all but perhaps the 1960s and early 1970s. This emphasis on compensating versus developing disadvantaged regions satisfies, in part, short term equity concerns, but it does not solve the long term efficiency problem (Lesser, 1983b).

The distinction between compensation and development does not rest on the simple distinctions between transfers and production/job-directed initiatives. The latter may well be nothing more than disguised transfer payments. Certainly, many of the programs and much of the money which have been directed towards the Atlantic fisheries illustrate this all too well, as Weeks and Mazany have documented in their Institute study *The Future of the Atlantic Fisheries*.

In seeking to promote development – that is, the creation of a self-sustaining economic base – there must be an emphasis on new initiatives and further strengthening of current areas of viability. Propping up declining industries or firms, while politically attractive in the short term, does not achieve this result and, more often than not, causes greater damage in the longer term.

Roy George emphasizes this point in *Targeting High-Growth Industry*, where he argues that neither the federal government nor any of the provincial governments have followed a consistent strategy of concentrating on industries thought to have particularly good prospects of growth. Indeed, George argues that "they have devoted much more resources to rescuing mature industries in distress".

A general strategy of attempting to pick winning industries is, however, rejected by George, based on a comparative review of the experience of ten industrial countries. He argues instead for better training (both workers and management), greater availability of capital, the stimulation of entrepreneurship, more research and development and an increased flow of information on business opportunities and techniques. He also emphasizes the need to focus on individual firms rather than whole industries or sectors per se.

Elizabeth Beale, in a study still in progress under the joint sponsorship of the Institute and the Atlantic Provinces Economic Council, has been addressing the question of appropriate federal policies in a different way – analyzing the impact which regional industrial incentive programs have had on Atlantic Canada since 1971. The focus is on that set of policies or programs which have attempted to provide employment and strengthen the industrial base of the region through grants, tax incentives and other forms of subsidy.

One result which has emerged involves confirmation of several trends known already through the work of the Economic Council of Canada and others. Beale shows that: since 1971 relative incomes in Atlantic Canada versus Canada as a whole have narrowed, but not by very much, rising from 71.6% of the Canadian average in 1971 to 75.2% in 1984; most of this improvement is due to increases in transfer payments; earned income, the measure of income from employment, dividends and profits of unincorporated business, has experienced almost no change from 1971 to 1984, moving from 66.6% in 1971 to 67.8% in 1984. This is consistent with a calculation of GDP per capita which shows a 1971 ratio of Atlantic provinces/Canada of 64.3% and a 1984 ratio of 64.6%.

While these figures suggest that the relative disparity of Atlantic Canada has not been much reduced, they do not prove that the programs in question have had no effect. The situation of Atlantic Canada might well have grown worse in the absence of regional development programming over this period of time. To properly assess the development impact regional programs have produced requires a more specific assessment of the programs themselves, an assessment which Ms. Beale's study hopes to provide.

Any assessment of the problem must recognize that the individual recipients and the program delivery system adopted by government, as well as the sectors/industries receiving assistance and the types of programs mounted all matter to the outcome. These are precisely the areas of concern identified by Roy George in rejecting a policy of attempting to pick winning industries and in drawing attention to the practice of the rescue of mature or declining industries.

For the Atlantic provinces, the future prospects for the mature resource industries of the region are among the crucial issues confronting policy makers. The work by Weeks and Mazany on the Atlantic fisheries, and that of Paul Huber, which deals with the forest industry in New Brunswick, both address aspects of this future. So, too, do the chapters on energy and fisheries included in the volume *Trade and Investment Across the Northeast Boundary: Quebec, the Atlantic Provinces and New England*, edited by W. Shipman. The energy issue is also addressed in the Maritime Energy Cooperation study by Savoie and Pinfold which is still underway, a project jointly sponsored with the Canadian Institute for Research on Regional Development.

Each of these studies highlights the crucial importance of resource industries in Atlantic Canada both to employment and to incomes and, within this context, the high export dependency of the resource sector. They also describe industries that are troubled.

Fisheries is beset by a basic conflict between social equity concerns and efficiency concerns, compounded by the common property nature of the resource, quality problems and marketing difficulties (Weeks and Mazany, 1983; Shipman, 1986 Ch.6). The forest industry in New Brunswick is plagued by weak markets, the high proportion of private land ownership, problems of forest management, especially on small private woodlots and the spruce budworm infestation. These are problems common throughout Atlantic Canada with the latter two holding the potential of leading to a serious supply problem in the next thirty years (Huber, 1985).

On the energy side, the Atlantic provinces fare no better. On the one hand, with the exception of hydro in Newfoundland and nuclear power in New Brunswick, they are plagued by high prices for traditional fossil-fuel generated electrical power and, on the other hand, by uncertainty surrounding the commercial development of offshore oil and gas deposits. Worse still, they see each other as competitors, both with regard to generation of own-power consumption and in their plans for export of power and/or oil and gas to the U.S. Little has been tried or accomplished in energy cooperation amongst the provinces of the region (Savoie/Pinfold).

On the export side, this lack of cooperation could have particularly serious implications for new energy development in the region (Savoie/Pinfold). As is demonstrated by Shipman's discussion of New England energy requirements and supply, the New England market simply cannot/will not absorb all the electric power, oil and gas which the Atlantic provinces hope to develop in the next several years (Shipman, 1986). As emphasized by Lesser (1985a) the proposed development of Lower Churchill hydro, a second nuclear plant in New Brunswick, Fundy Tidal Power, Hibernia oil and gas, Nova Scotia offshore gas, and Nova Scotia coal-generated electricity, all predicated on the potential for export to the U.S., is not only unlikely to happen but could produce serious difficulties in the process of trying. This is especially so when one considers that Quebec and Ontario are also major exporters of power to the northeastern U.S. and also have their own plans for development of new energy projects for export to the U.S.

The New England market in the U.S. is crucial to overall Atlantic Canada exports, not just energy. Fully 60% of total Atlantic exports are to the U.S. and 50% of this amount goes to New England (Shipman, 1986). Thus the New England market is vital to the Atlantic economy.

Most of these exports to the U.S. are primary and semi-finished goods such as fish products which represent over 40% of the total. In general, Atlantic Canada imports from New England and the U.S. are primarily finished manufactures (Shipman, 1986).

The high primary product export dependency of the Atlantic provinces highlights not only the strategic importance of primary product exports, it is also important to a consideration of the implications of a possible U.S.-Canada free trade agreement on the Atlantic provinces.

Hugh Pinchin (Shipman, 1986, Ch. 4) estimates the probable impact of a free trade agreement with the U.S. on Ontario, Quebec and the Atlantic provinces. For the Atlantic region, his analysis shows a positive gain but one that is small both in absolute terms and relative to Ontario and Quebec. Moreover, his analysis suggests that the source of any gains will be primarily on the consumption side of the market, a result of lower prices for finished manufactured goods consumed in Atlantic Canada. By Pinchin's estimates, the production side of the market will suffer a net loss overall as the relatively small and vulnerable manufacturing interests of Atlantic Canada are subjected to greater competition in their local market.

This analysis of the impact of free trade has two major implications for regional development in Atlantic Canada. First, a negative impact on the production side of the market, if realized, will retard development as defined earlier. Second, a net gain in Atlantic Canada from free trade which is significantly smaller than the net gain in Central Canada will produce a *relative* loss for Atlantic Canada. This means that, all other things equal, existing regional disparities will be widened (Lesser, 1985b). In addition the prospect that a free trade agreement may restrict government grant/incentive programs in less advantaged regions as well as government procurement policies (with resulting implications for local producers), could turn the small positive gain forecast by Pinchin into an absolute loss (Lesser, 1985a, 1985b, 1986a).

Obviously, the actual terms of a free trade agreement, including the time schedule for implementation, will determine which effects will be realized. Free trade could act, however, as a spur to Atlantic business which would eventually produce major gains, under the appropriate circumstances (Lesser, 1986a). For this reason, there is a clear need for the Atlantic provinces to maintain as strong a voice as possible in attempting to influence the course of the negotiations on the Canadian side to safeguard their interests.

The possibility that a Canada-U.S. free trade agreement might spur new development in Atlantic Canada underlines a major proposition which emerges in several of the Institute's regional studies – the need to generate new employment opportunities in the region. This point is made by Weeks and Mazany in their study of the Atlantic fisheries, by Lesser and Hall in work on the regional development implications of computer-communications technology, by Wien in his study of employment strategies for the Micmac in Nova Scotia, and by Osberg in his comparative analysis of the sealing industry in Norway and Canada.

These latter two studies (Wien and Osberg) relate to two particular groups of workers in Atlantic Canada who are part of the so-called marginal work force, workers on the outer edge of the mainstream labour market. Like many inshore fishermen, who also form part of this marginal work force (Weeks and Mazany, 1983), these are workers who by virtue of education, training and/or location, have very limited employment opportunities, hold relatively low-skill, low-pay jobs and experience relatively high rates of unemployment. Such workers are not unique to Atlantic Canada but are relatively more significant there than in many provinces. Moreover, a significant number of these workers are to be found in small (often coastal) communities. This means not only marginal workers but marginal communities and traditional ways of life are at stake in the need to create new employment opportunities for these people.

The specific issue of employment opportunities for the Micmac in Nova Scotia (Wien, 1986) suggests a type of "miniature replica" of the Atlantic provinces themselves. The Micmac are hampered by the lack of a self-sustaining economic base, are characterized by relatively high levels of unemployment, relatively low levels of income and excessive dependence on government transfers. Carrying the analogy a step further, one of Wien's conclusions is that government spending for the Micmac needs to place greater emphasis on developmental and preventive measures rather than remedial measures. This prescription is that made earlier for the Atlantic provinces in general.

One possible area of new employment opportunities for the Atlantic region is identified by Lesser and Hall in *Telecommunications Services and Regional Development: The Case of Atlantic Canada*. This is the area of computer-communications and information-related work, areas of potential major growth in Canada as the transformation to an information economy unfolds. Whether this potential is of positive benefit to relatively disadvantaged regions is uncertain, because the technology of the information economy can lead to either greater centralization or greater decentralization of economic activity. Which of these two possible outcomes is realized depends not only on the technology per se but also on the structural and institutional characteristics of the labour force and the economy of less developed regions. If the outcome is left to the market alone, the result is likely to be to the disadvantage of such regions. Thus there is a necessary role to be played by government, if a more equitable regional distribution of the benefits of an information economy is to be realized.

This issue of the regional implications of an information economy is an important one. The move to an information economy is a major change taking place in the national economy and it is important, indeed vital, that less advantaged regions not be by-passed in this development in the relative sense which was true of the industrialization of the economy in the past century (Lesser, 1986b). Moreover, it underlines what might be regarded as a major failure of regional development policy over the last two decades, namely the failure to place any particular emphasis on the service sector, the area in which information-intensive jobs and activities are most dominant. Regional development policy has been primarily concerned with the primary and secondary sectors and with infrastructure development. This preoccupation has not included the communications sector/industry. Despite the fact that the service sector has been the fastest growing segment of the labour force since the 1920s, it has received virtually no attention from regional development policy markers in terms of actual programs.

What emerges as a conclusion from a review of the principal results of IRPP's Regional Employment Opportunities Program is the need for a continuing commitment by government to seek constructive solutions to reduce or eliminate regional economic disparities in Canada. It highlights the need for policies which concentrate on development, not compensation.

In the first study undertaken by the program, Ian McAllister, the director of the program in its first two years, examined regional development policy in the EEC and its lessons for Canada. One of his major conclusions was that in the EEC, as in Canada, there seems to have been too much attention paid to explicit instruments of regional policy and not enough to the regional implications of national policies. The preceding discussion of a Canada-U.S. free trade agreement and of the regional implications of the information economy demonstrate this same argument as does the history of the region. Since Confederation, the Atlantic provinces have lost repeatedly at the hands of national policies. Two examples among the many which might be cited are the tariff of 1879 and transportation policy in the period leading up to and immediately following World War I. The point in raising this history of the region is not to open old wounds but to direct attention to a basic truth: explicit regional policy instruments will not succeed in reducing regional disparities if national economic policy runs contrary to the interests of the same regions. Regional policy must be seen in the context of the economy as a whole. It was precisely for this reason that the Institute moved from a discrete program on regional development in Atlantic Canada to the incorporation of regional perspectives into its overall research program.

The papers in this volume, *Still Living Together*, represent an up-to-date, comprehensive and important collection of articles on regional development issues and concerns. They were not commissioned as a part of the Institute's REOP studies but are the product of an independent conference. They afford, however, a useful forum in which to disseminate a summary of the findings which resulted from the Institute research program. We are pleased to publish this book and are grateful the editors were willing to include our commentary. We hope the volume contributes to a greater understanding of the issues involved and that it may serve as a catalyst for helping to develop constructive solutions to Canadian regional disparities.

References

Beale, E. (in progress), *Regional Industrial Policy: Its Impact on Atlantic Canada.*

George, R. (1983), *Targeting High-Growth Industry*, (Montreal: IRPP).

Huber, P. (1985), *Promoting Timber Cropping: Policies Toward Non-Industrial Forest Owners in New Brunswick*, (Montreal: IRPP).

Keene, S. (1985), *Canadian Regionalism and Political Culture: A Bibliography*, (Halifax: IRPP).

Lesser, B. (1983a), "Troubled Remedies" (book review), *Policy Options*, 4,4.

_____________ (1983b), "Regional Development Matters", *Policy Options*, 4,6.

_____________ (1984), "Dependency and Development" (book review), *Policy Options*, 5,2.

_____________ (1985a), "Submission to Joint Committee on Canada's International Relations", Minutes of Proceedings and Evidence of the Special Joint Committee of the Senate and of the House of Commons on Canada's International Relations, Issue no.2, (Ottawa: Supply and Services, 1985) pp. 2:45-2:56.

_____________ (1985b), "The Frying Pan and the Fire", *Policy Options*, 6,9.

_____________ (1986a), "Canada-U.S. Free Trade and the Atlantic Provinces: A Review of the Economic Arguments", (Halifax: IRPP).

_____________ (1986b), "The Information Economy, Regional development and Public Policy: Opening a New Window of Opportunity", *Policy Options* (forthcoming).

_____________ and P. Hall (1986), *Telecommunications Services and Regional Development: The Case of Atlantic Canada,* (Montreal: IRPP).

_____________ and D. Poel (1983), "A Research Proposal for A Study of Regions, Regionalism and Regional Development in Canada", (Halifax: IRPP).

McAllister, R.I. (1982), *Regional Development and the European Community,* (Montreal: IRPP).

Osberg, L. (1985), "Policies for Adjusting to a Decline in the Sealing Industry: The Norwegian Experience", a report submitted to the Royal Commission on Seals and the Sealing Industry in Canada (Halifax: IRPP).

Shipman, W. (ed.) (1986), *Trade and Investment Across the Northeast Boundary: Quebec, the Atlantic Provinces and New England,* (Montreal: IRPP).

Savoie, D. and T. Pinfold (in progress), *Maritime Energy Cooperation.*

Weeks, E. and L. Mazany (1983), *The Future of the Atlantic Fisheries,* (Montreal: IRPP).

Wien, F. (1986), *Rebuilding the Economic Base of Indian Communities: The Micmac in Nova Scotia,* (Montreal: IRPP).

Members of the Institute

Board of Directors

The Honourable John B. Aird, O.C.,Q.C. (Honorary Chairman)
Aird & Berlis
Toronto
The Honourable Robert L. Stanfield, P.C., Q.C., (Chairman)
Ottawa
Roger Charbonneau (Vice-Chairman)
Président du conseil d'administration
Banque Nationale de Paris (Canada)
Montréal
Dr. Robert Bandeen
President and Chief Executive Officer
Cluny Corporation
Toronto
Larry I. Bell
Chief Executive Officer
Vancouver City Savings Credit Union
Nan-Bowles de Gaspé Beaubien
Vice-présidente, ressources humaines
Télémédia Inc.
Montréal
Louis A. Desrochers, Q.C.
McCuaig, Desrochers
Edmonton
Peter C. Dobell
Director, Parliamentary Centre for Foreign Affairs and Foreign Trade
Ottawa
Dr. Rod Dobell
President, The Institute for Research on Public Policy
Victoria
Dr. Regis Duffy
President
Diagnostic Chemicals Ltd.
Charlottetown
Dr. James D. Fleck
Faculty of Management Studies
University of Toronto
Peter C. Godsoe
Vice Chairman of the Board
The Bank of Nova Scotia
Toronto
Dianne I. Hall
Senior Vice-President,
NOVA, AN ALBERTA CORPORATION
Calgary
David Hennigar
Atlantic Regional Director
Burns Fry Limited
Halifax
Roland J. Lutes, C.A.
Clarkson Gordon
Montreal
Dr. Tom Pepper
Pepper Consultants Ltd.
Saskatoon
Guy Roberge, C.R.
Conseil
Clarkson, Tétrault
Ottawa
Robert K. Siddall
Senior Vice-President & Secretary
The Great-West Life Assurance Co.
Winnipeg
Marc-Adélard Tremblay, O.C.
Départément d'anthropologie
Université Laval
Sainte-Foy

President
Rod Dobell

Vice-President and Secretary-Treasurer
Peter C. Dobell

Investment Committee
Peter C. Godsoe, Chairman
Robert Bandeen
Marcel Cazavan
Peter C. Dobell
Michael Koerner

Executive Committee
The Hon. Robert L. Stanfield
(Chairman)
Dr. Roger Charbonneau
(Vice-Chairman)
Peter C. Dobell
Dr. Rod Dobell
Dr. James D. Fleck
Roland J. Lutes

Council of Trustees
Members at Large
Dr. Stefan Dupré (Chairman)
Department of Political Science
University of Toronto
Doris H. Anderson, O.C.
Toronto
Marie-Andrée Bertrand
École de criminologie
Université de Montréal
Dr. Roger A. Blais, O.C.
Directeur, R-D coopératifs
École Polytechnique de Montréal
George Cooper, Q.C.
McInnes, Cooper and Robertson
Halifax
James S. Cowan, Q.C.
Partner
Stewart, MacKeen & Covert
Halifax
V. Edward Daughney
President
First City Trust Company
Vancouver
Dr. Wendy Dobson
President
C.D. Howe Institute
Toronto
Dr. H.E. Duckworth, O.C.
Chancellor
University of Manitoba
Winnipeg
Marc Eliesen
Chairperson
Manitoba Energy Authority
Winnipeg
Emery Fanjoy
Secretary
Council of Maritime Premiers
Halifax
Dr. Allan K. Gillmore
Executive Director
Association of Universities and Colleges of Canada
Ottawa
Dr. Donald Glendenning
President, Holland College
Charlottetown
Margaret C. Harris
Past President, The National Council of Women of Canada
Saskatoon
Richard W. Johnston
President
Spencer Stuart & Associates
Toronto
Dr. Leon Katz, O.C.
Saskatoon
Dr. David Leighton
Director, National Centre for Management Research and Development, University of Western Ontario
London
Terrence Mactaggart
Managing Director
Sound Linked Data Inc.
Mississauga
Claude Morin
École nationale d'administration publique
Québec
Milan Nastich
Canadian General Investments Limited
Toronto

Professor William A. W. Neilson
Dean, Faculty of Law
University of Victoria
Roderick C. Nolan, P.Eng.
Executive Vice-President
Neill & Gunter Limited
Fredericton
Robert J. Olivero
United Nations Secretariat
New York
Gordon F. Osbaldeston
Senior Fellow, School of Business
Administration, University of
Western Ontario
London
Garnet T. Page, O.C.
Calgary
Dr. K. George Pedersen
President
University of Western Ontario
London
Professor Marilyn L. Pilkington
Osgoode Hall Law School
Toronto
Dr. Stuart L. Smith
Chairman
Science Council of Canada
Ottawa
Eldon D. Thompson
President, Telesat
Vanier
Dr. Israel Unger
Department of Chemistry
University of New Brunswick
Fredericton
Philip Vineberg, O.C., Q.C.
Phillips & Vineberg
Montreal
Dr. Norman Wagner
President and Vice-Chancellor
University of Calgary
Ida Wasacase, C.M.
Winnipeg
Mr. Ronald L. Watts
Department of Political Studies
Queen's University
Kingston
Dr. R. Sherman Weaver
Director
Alberta Environmental Centre
Vegreville
Dr. Blossom Wigdor
Director, Program in Gerontology
University of Toronto

Government Representatives

Roger Burke, Prince Edward Island
Herb Clarke, Newfoundland
Joseph H. Clarke, Nova Scotia
Christian Dufour, Québec
Hershell Ezrin, Ontario
George Ford, Manitoba
Barry Mellon, Alberta
John H. Parker, Northwest Territories
Norman Riddell, Saskatchewan
Eloise Spitzer, Yukon
Barry Toole, New Brunswick

Institute Management

Rod Dobell	President
Peter Dobell	Vice-President and Secretary-Treasurer
Yvon Gasse	Director, Small & Medium-Sized Business Program
Barbara L. Hodgins	Director, Western Resources Program
John Langford	Director, Governability Research Program
Barry Lesser	Director, Information Society Studies Program
Shirley Seward	Director, Studies in Social Policy
Frank Stone	Director, International Economics Program
Parker Staples	Director, Financial Services
Donald Wilson	Director, Communications
Louis Vagianos	Director, Publishing Services
Tom Kent	Editor, *Policy Options Politiques*

Fellows- and Scholars-in-Residence:

Edgar Gallant	Fellow-in-Residence
Tom Kent	Fellow-in-Residence
Eric Kierans	Fellow-in-Residence
Jean-Luc Pepin	Fellow-in-Residence
Gordon Robertson	Fellow-in-Residence
David Burgess	Scholar-in-Residence
Barry Cooper	Scholar-in-Residence

Publications Available —January 1987

Order Address

The Institute for Research on Public Policy
P.O. Box 3670 South
Halifax, Nova Scotia
B3J 3K6

Leroy O. Stone & Claude Marceau	*Canadian Population Trends and Public Policy Through the 1980s.* 1977 $4.00
Raymond Breton	*The Canadian Condition: A Guide to Research in Public Policy.* 1977 $2.95
J.W. Rowley & W.T. Stanbury (eds.)	*Competition Policy in Canada: Stage II, Bill C-13.* 1978 $12.95
C.F. Smart & W.T. Stanbury (eds.)	*Studies on Crisis Management.* 1978 $9.95
W.T. Stanbury (ed.)	*Studies on Regulation in Canada.* 1978 $9.95
Michael Hudson	*Canada in the New Monetary Order: Borrow? Devalue? Restructure!* 1978 $6.95
David K. Foot (ed.)	*Public Employment and Compensation in Canada: Myths and Realities.* 1978 $10.95
Raymond Breton & Gail Grant Akian	*Urban Institutions and People of Indian Ancestry: Suggestions for Research.* 1979 $3.00
Thomas H. Atkinson	*Trends in Life Satisfaction Among Canadians, 1968-1977.* 1979 $3.00
W.E. Cundiff & Mado Reid (eds.)	*Issues in Canadian/U.S. Transborder Computer Data Flows.* 1979 $6.50
Meyer W. Bucovetsky (ed.)	*Studies in Public Employment and Compensation in Canada.* 1979 $14.95
Richard French & André Béliveau	*The RCMP and the Management of National Security.* 1979 $6.95

G. Bruce Doern & Allan M. Maslove (eds.)	*The Public Evaluation of Government Spending.* 1979 $10.95
Leroy O. Stone & Michael J. MacLean	*Future Income Prospects for Canada's Senior Citizens.* 1979 $7.95
Richard M. Bird	*The Growth of Public Employment in Canada.* 1979 $12.95
Richard J. Schultz	*Federalism and the Regulatory Process.* 1979 $1.50
Richard J. Schultz	*Le fédéralisme et le processus de réglementation.* 1979 $1.50
Elliot J. Feldman & Neil Nevitte (eds.)	*The Future of North America: Canada, the United States, and Quebec Nationalism.* 1979 $7.95
David R. Protheroe	*Imports and Politics: Trade Decision Making in Canada, 1968-1979.* 1980 $8.95
G. Bruce Doern	*Government Intervention in the Canadian Nuclear Industry.* 1980 $8.95
G. Bruce Doern & Robert W. Morrison (eds.)	*Canadian Nuclear Policies.* 1980 $14.95
Allan M. Maslove & Gene Swimmer	*Wage Controls in Canada: 1975-78: A Study of Public Decision Making.* 1980 $11.95
T. Gregory Kane	*Consumers and the Regulators: Intervention in the Federal Regulatory Process.* 1980 $10.95
Réjean Lachapelle & Jacques Henripin	*La situation démolinguistique au Canada: évolution passée et prospective.* 1980 $24.95
Albert Breton & Anthony Scott	*The Design of Federations.* 1980 $6.95
A.R. Bailey & D.G. Hull	*The Way Out: A More Revenue-Dependent Public Sector and How It Might Revitalize the Process of Governing.* 1980 $6.95
David R. Harvey	*Christmas Turkey or Prairie Vulture? An Economic Analysis of the Crow's Nest Pass Grain Rates.* 1980 $10.95
Donald G. Cartwright	*Official Language Populations in Canada: Patterns and Contacts.* 1980 $4.95
Richard M. Bird	*Taxing Corporations.* 1980 $6.95
Leroy O. Stone & Susan Fletcher	*A Profile of Canada's Older Population.* 1980 $7.95
Peter N. Nemetz (ed.)	*Resource Policy: International Perspectives.* 1980 $18.95
Keith A.J. Hay (ed.)	*Canadian Perspectives on Economic Relations With Japan.* 1980 $18.95

Dhiru Patel	*Dealing With Interracial Conflict: Policy Alternatives.* 1980 $5.95
Raymond Breton & Gail Grant	*La langue de travail au Québec : synthèse de la recherche sur la rencontre de deux langues.* 1981 $10.95
David M. Cameron (ed.)	*Regionalism and Supranationalism: Challenges and Alternatives to the Nation-State in Canada and Europe.* 1981 $9.95
Heather Menzies	*Women and the Chip: Case Studies of the Effects of Information on Employment in Canada.* 1981 $8.95
H.V. Kroeker (ed.)	*Sovereign People or Sovereign Governments.* 1981 $12.95
Peter Aucoin (ed.)	*The Politics and Management of Restraint in Government.* 1981 $17.95
Nicole S. Morgan	*Nowhere to Go? Possible Consequences of the Demographic Imbalance in Decision-Making Groups of the Federal Public Service.* 1981 $8.95
Nicole S. Morgan	*Où aller? Les conséquences prévisibles des déséquilibres démographiques chez les groupes de décision de la fonction publique fédérale.* 1981 $8.95
Raymond Breton, Jeffrey G. Reitz & Victor F. Valentine	*Les frontières culturelles et la cohésion du Canada.* 1981 $18.95
Peter N. Nemetz (ed.)	*Energy Crisis: Policy Response.* 1981 $10.95
James Gillies	*Where Business Fails.* 1981 $9.95
Allan Tupper & G. Bruce Doern (eds.)	*Public Corporations and Public Policy in Canada.* 1981 $16.95
Réjean Lachapelle & Jacques Henripin	*The Demolinguistic Situation in Canada: Past Trends and Future Prospects.* 1982 $24.95
Irving Brecher	*Canada's Competition Policy Revisited: Some New Thoughts on an Old Story.* 1982 $3.00
Ian McAllister	*Regional Development and the European Community: A Canadian Perspective.* 1982 $13.95
Donald J. Daly	*Canada in an Uncertain World Economic Environment.* 1982 $3.00
W.T. Stanbury & Fred Thompson	*Regulatory Reform in Canada.* 1982 $7.95

Robert J. Buchan, C. Christopher Johnston, T. Gregory Kane, Barry Lesser, Richard J. Schultz & W.T. Stanbury	*Telecommunications Regulation and the Constitution.* 1982 $18.95
Rodney de C. Grey	*United States Trade Policy Legislation: A Canadian View.* 1982 $7.95
John Quinn & Philip Slayton (eds.)	*Non-Tariff Barriers After the Tokyo Round.* 1982 $17.95
Stanley M. Beck & Ivan Bernier (eds.)	*Canada and the New Constitution: The Unfinished Agenda.* 2 vols. 1983 $10.95 (set)
R. Brian Woodrow & Kenneth B. Woodside (eds.)	*The Introduction of Pay-TV in Canada: Issues and Implications.* 1983 $14.95
E.P. Weeks & L. Mazany	*The Future of the Atlantic Fisheries.* 1983 $5.00
Douglas D. Purvis (ed.), assisted by Frances Chambers	*The Canadian Balance of Payments: Perspectives and Policy Issues.* 1983 $24.95
Roy A. Matthews	*Canada and the "Little Dragons": An Analysis of Economic Developments in Hong Kong, Taiwan, and South Korea and the Challenge/Opportunity They Present for Canadian Interests in the 1980s.* 1983 $11.95
Charles Pearson & Gerry Salembier	*Trade, Employment, and Adjustment.* 1983 $5.00
Steven Globerman	*Cultural Regulation in Canada.* 1983 $11.95
F.R. Flatters & R.G. Lipsey	*Common Ground for the Canadian Common Market.* 1983 $5.00
Frank Bunn, assisted by U. Domb, D. Huntley, H. Mills, H. Silverstein	*Oceans from Space: Towards the Management of Our Coastal Zones.* 1983 $5.00
C.D. Shearing & P.C. Stenning	*Private Security and Private Justice: The Challenge of the 80s.* 1983 $5.00
Jacob Finkelman & Shirley B. Goldenberg	*Collective Bargaining in the Public Service: The Federal Experience in Canada.* 2 vols. 1983 $29.95 (set)
Gail Grant	*The Concrete Reserve: Corporate Programs for Indians in the Urban Work Place.* 1983 $5.00
Owen Adams & Russell Wilkins	*Healthfulness of Life.* 1983 $8.00
Yoshi Tsurumi with Rebecca R. Tsurumi	*Sogoshosha: Engines of Export-Based Growth.* (Revised Edition). 1984 $10.95
Raymond Breton & Gail Grant (eds.)	*The Dynamics of Government Programs for Urban Indians in the Prairie Provinces.* 1984 $19.95

Frank Stone	*Canada, The GATT and the International Trade System.* 1984 $15.00
Pierre Sauvé	*Private Bank Lending and Developing-Country Debt.* 1984 $10.00
Mark Thompson & Gene Swimmer	*Conflict or Compromise: The Future of Public Sector Industrial Relations.* 1984 $15.00
Samuel Wex	*Instead of FIRA: Autonomy for Canadian Subsidiaries?* 1984 $8.00
R.J. Wonnacott	*Selected New Developments in International Trade Theory.* 1984 $7.00
R.J. Wonnacott	*Aggressive US Reciprocity Evaluated with a New Analytical Approach to Trade Conflicts.* 1984 $8.00
Richard W. Wright	*Japanese Business in Canada: The Elusive Alliance.* 1984 $12.00
Paul K. Gorecki & W.T. Stanbury	*The Objectives of Canadian Competition Policy, 1888-1983.* 1984 $15.00
Michael Hart	*Some Thoughts on Canada-United States Sectoral Free Trade.* 1985 $7.00
J. Peter Meekison Roy J. Romanow & William D. Moull	*Origins and Meaning of Section 92A: The 1982 Constitutional Amendment on Resources.* 1985 $10.00
Conference Papers	*Canada and International Trade. Volume One: Major Issues of Canadian Trade Policy. Volume Two: Canada and the Pacific Rim.* 1985 $25.00 (set)
A.E. Safarian	*Foreign Direct Investment: A Survey of Canadian Research.* 1985 $8.00
Joseph R. D'Cruz & James D. Fleck	*Canada Can Compete! Strategic Management of the Canadian Industrial Portfolio.* 1985 $18.00
Barry Lesser & Louis Vagianos	*Computer Communications and the Mass Market in Canada.* 1985 $10.00
W.R. Hines	*Trade Policy Making in Canada: Are We Doing it Right?* 1985 $10.00
Bertrand Nadeau	*Britain's Entry into the European Economic Community and its Effect on Canada's Agricultural Exports.* 1985 $10.00
Paul B. Huber	*Promoting Timber Cropping: Policies Toward Non-Industrial Forest Owners in New Brunswick.* 1985 $10.00
Gordon Robertson	*Northern Provinces: A Mistaken Goal.* 1985 $8.00

Petr Hanel	*La technologie et les exportations canadiennes du matériel pour la filière bois-papier.* 1985 $20.00
Russel M. Wills, Steven Globerman & Peter J. Booth	*Software Policies for Growth and Export.* 1986 $15.00
Marc Malone	*Une place pour le Québec au Canada.* 1986 $20.00
A. R. Dobell & S. H. Mansbridge	*The Social Policy Process in Canada.* 1986 $8.00
William D. Shipman (ed.)	*Trade and Investment Across the Northeast Boundary: Quebec, the Atlantic Provinces, and New England.* 1986 $20.00
Nicole Morgan	*Implosion: An Analysis of the Growth of the Federal Public Service in Canada (1945-1985).* 1986 $20.00
Nicole Morgan	*Implosion: analyse de la croissance de la Fonction publique fédérale canadienne (1945-1985).* 1986 $20.00
William A.W. Neilson & Chad Gaffield (eds.)	*Universities in Crisis: A Mediaeval Institution in the Twenty-first Century.* 1986 $20.00
Fred Wien	*Rebuilding the Economic Base of Indian Communities: The Micmac in Nova Scotia.* 1986 $20.00
D.M. Daly & D.C. MacCharles	*Canadian Manufactured Exports: Constraints and Opportunities.* 1986 $20.00
Gerald d'Amboise, Yvon Gasse & Rob Dainow	*The Smaller, Independent Manufacturer: 12 Quebec Case Studies.* 1986 $20.00
David J. Roy & Maurice A.M. de Wachter	*The Life Technologies and Public Policy.* 1986 $20.00
David Feeny, Gordon Guyatt & Peter Tugwell (eds.)	*Health Care Technology: Effectiveness, Efficiency, and Public Policy.* 1986 $20.00
International Symposium	*Les répercussions de l'informatisation en milieu de travail / The Impact of New Information Technologies on the Workplace.* 1986 $20.00
N.G. Papadopoulos	*Canada and the European Community: An Uncomfortable Partnership?* 1986 $15.00
W.T. Stanbury (ed.)	*Telecommunications Policy and Regulation: The Impact of Competition and Technological Change.* 1986 $22.00
James Gillies	*Facing Reality: Consultation, Consensus and Making Economic Policy for the 21st Century.* 1986 $15.95

International Seminar	*The Management of Water Resources – Proceedings / La gestion des ressources en eau – Actes.* 1986 $20.00
William J. Coffey & Mario Polèse (eds.)	*Still Living Together: Recent Trends and Future Directions in Canadian Regional Development.* 1987 $25.00
Bryan Schwartz	*First Principles, Second Thoughts: Aboriginal Peoples, Constitutional Reform and Canadian Statecraft.* 1987 $25.00

The Institute for Research on Public Policy
L'Institut de recherches politiques

A national, independent, research organization
Un organisme de recherche national et indépendant

Créé en 1972, l'Institut de recherches politiques est un organisme national dont l'indépendance et l'autonomie sont assurés grâce à des revenus provenant d'un fonds de dotation auquel souscrivent les gouvernements fédéral et provinciaux ainsi que le secteur privé. L'Institut obtient en outre des subventions et des contrats des gouvernements, des compagnies et des fondations afin de réaliser certains projets de recherche.

La raison d'être de l'Institut est triple :

- Servir de catalyseur au sein de la collectivité nationale en favorisant un débat public éclairé sur les principales questions d'intérêt général.
- Stimuler la participation de tous les éléments de la collectivité nationale à l'élaboration de la politique d'État.
- Trouver des solutions réalisables aux importants problèmes d'ordre politique afin de contribuer à l'élaboration d'une saine politique d'État.

Un Conseil d'administration, chargé de la décision, et une Commission de direction, responsable d'éclairer le Conseil sur l'orientation de la recherche, assurent la direction de l'Institut. L'administration courante des politiques, des programmes et du personnel relève du président.

L'Institut fonctionne de manière décentralisée et retient les services de chercheurs en divers points du Canada, s'assurant ainsi que toutes les régions contribuent aux recherches.

L'Institut cherche à favoriser, dans la mesure du possible, la compréhension et la discussion publiques des questions d'envergure nationale, controversées ou non. Il publie les conclusions de ses recherches avec clarté et impartialité. Les recommandations ou les conclusions énoncées dans les publications de l'Institut sont strictement celles de l'auteur et n'engagent aucunement le conseil d'administration, la commission de direction ou les bailleurs de fonds.

Le président assume la responsabilité ultime de publier un manuscrit au nom de l'Institut. Il jouit à cette fin des conseils du personnel de l'Institut et de critiques de l'extérieur quant à l'exactitude et l'objectivité du texte. Ne sont publiés que les textes qui traitent de façon compétente d'un sujet digne de la réflexion du public.

Les publications de l'Institut paraissent dans la langue de l'auteur et sont accompagnées d'un abrégé dans les langues officielles du Canada.

STILL LIVING TOGETHER:
RECENT TRENDS AND FUTURE DIRECTIONS IN CANADIAN REGIONAL DEVELOPMENT

William J. Coffey and Mario Polèse, eds.

Regional economic development is a long-standing issue of public policy in Canada. Despite the attention it has received, however, and despite major government programs and expenditures aimed at stimulating regional development, the problem of regional disparities has not been significantly reduced. New approaches to addressing the problem are required.

In addition to the failure of past policies to reduce regional disparities, new pressures from developments in energy, technology, and trade relations, among others, are impacting on Canada's regions in different ways. These pressures, too, require new approaches if they are to be adequately addressed.

This volume presents the proceedings of a conference held at Dalhousie University in October 1985. It presents an overview of the dimensions of regional development in Canada, examines some of the important new forces acting on regional economies and offers conclusions on past policies and new approaches for the future.

Regional development should be a concern for all Canadians. This book provides an up-to-date basis for a better understanding of the problem of regional development, the forces which shape the problem and means of dealing with it. As such it represents an important contribution to one of the most important concerns of public policy debate in Canada today.

ISBN 0-88645-047-0 **$25.00**

The Institute for Research on Public Policy
L'Institut de recherches politiques

A national, independent, research organization
Un organisme de recherche national et indépendant